INTERNATIONAL
ROAD
DYNAMICS
INC.

TP 9477E

Development and Demonstration of a Low Cost Weigh-In-Motion Scale System For Highway Applications

Prepared for:
Transportation Development Centre
Policy and Coordination Group
Transport Canada

By:
International Road Dynamics Inc.
May, 1989

CA1
DTC 800
89
D22

INTERNATIONAL ROAD DYNAMICS
SASKATOON, SASK., CANADA

90-04080/

TP 9477E

Development and Demonstration of a Low Cost Weigh-In-Motion Scale System For Highway Applications

By:

Les Routledge
Terry Bergan
Brian Taylor

International Road Dynamics Inc.
702 43rd Street East
Saskatoon, Saskatchewan
S7K 3T9

May, 1989

DISCLAIMER:

The contents of this report reflect the views of International Road Dynamics Inc. and not necessarily the view or opinions of the Transportation Development Centre of Transport Canada.

Language Note:

Un sommaire en français de ce rapport est inclus avant la Table des matières.

Transport Canada / Transports Canada

PUBLICATION DATA FORM

1. Transport Canada Publication No.	2. Project No.	3. Recipient's Catalogue No.
TP 9477E	6787/6788	

4. Title and Subtitle	5. Publication Date
Development and Demonstration of a Low Cost Weigh-In-Motion Scale System for Highway Applications	May 1989
	6. Performing Organization Document No.

7. Author(s)	8. Transport Canada File No.
Les Routledge, Terry Bergan, Brian Taylor	D1465-492-2

9. Performing Organization Name and Address	10. DSS File No.
International Road Dynamics, Inc. 702 - 43rd Street East Saskatoon, Saskatchewan S7K 3T9	11SD.T8200-6-6529
	11. DSS or Transport Canada Contract No. T8200-6-6529/0.1-SD

12. Sponsoring Agency Name and Address	13. Type of Publication and Period Covered
Transportation Development Centre (TDC) 200 René Lévesque Blvd. West West Tower, Suite 601 Montreal, Quebec H2Z 1X4	Final Report
	14. Project Officer Sesto Vespa

15. Supplementary Notes (Funding programs, titles of related publications, etc.)

16. Abstract

In 1986, International Road Dynamics was contracted by the Transportation Development Centre to develop and test a piezoelectric weigh-in-motion (WIM) system that would weigh, classify and count vehicles, and continuously collect data on traffic operating at normal highway speeds. A full-scale system was installed for testing and demonstration purposes on six lanes at a site on Highway 7 north of Toronto. A first test site for the piezoelecric cables was provided and prepared by the Saskatchewan Department of Highways and Transportion; the full system demonstration site was by the Ontario Ministry of Transportation and Communications.

The work included the design and construction of prototype electronic hardware to gather signals from the piezoelectric cables and other system components. Software was developed to interpret the cable signals and to provide a user-friendly method of monitoring the scale output. The weigh-in-motion scale could be accessed remotely using a standard computer terminal and telephone modem.

Full system tests found that the piezoelectric WIM reliably measures any vehicle weight normally encountered on North American highways. It classifies vehicle types and provides weight measurements with an accuracy comparable to that of existing platform WIM systems. Weight measurement variance, however, is double that of platform WIM scales. Its cost is about 25% that of conventional systems.

17. Key Words	18. Distribution Statement
Weigh-in-motion, highways, scales, weighing, weigh stations.	Limited number of copies available from the Transportation Development Centre

19. Security Classification (of this publication)	20. Security Classification (of this page)	21. Declassification (date)	22. No. of Pages	23. Price
Unclassified	Unclassified	-		

TDC/CDT 79-005
Rev 88

Canada

Transports Canada / Transport Canada

FORMULE DE DONNÉES POUR PUBLICATION

1. N° de la publication de Transports Canada	2. N° de l'étude	3. N° de catalogue du destinataire
TP 9477E	6787/6788	

4. Titre et sous-titre

Development and Demonstration of a Low Cost Weigh-In-Motion Scale System for Highway Applications

5. Date de la publication

mai 1989

6. N° du document de l'organisme exécutant

7. Auteur(s)

Les Routledge, Terry Bergan, Brian Taylor

8. N° de dossier — Transports Canada

D 1465-492-2

9. Nom et adresse de l'organisme exécutant

International Road Dynamics, Inc.
702 - 43rd Street East
Saskatoon, Saskatchewan
S7K 3T9

10. N° de dossier — ASC

11SD.T8200-6-6529

11. N° de contrat — ASC ou Transports Canada

T8200-6-6529/0.1-SD

12. Nom et adresse de l'organisme parrain

Centre de développement des transports (CDT)
200 ouest boul. René-Lévesque
Tour ouest, suite 601
Montréal (Québec)
H2Z 1X4

13. Genre de publication et période visée

rapport final

14. Agent de projet

Sesto Vespa

15. Remarques additionnelles (Programmes de financement, titres de publications connexes, etc.)

16. Résumé

En 1986, le Centre de développement des transports a confié à International Road Dynamics Inc. la tâche d'étudier et d'essayer un système de pesage dynamique fondé sur la piézo-électricité, laquelle permet le pesage des véhicules, leur classification et leur comptage et assure, de plus, le suivi statistique du trafic aux vitesses normales de circulation. Un système en vraie grandeur a été implanté aux fins des essais et de la démonstration sur l'autoroute 7 nord de Toronto qui comporte six voies. Un premier site d'expérimentation des câbles piézo-électriques avait été fourni et approprié par le Ministère de la voirie et des transports de la Saskatchewan, tandis que le programme de démonstration en vraie grandeur a été pris en charge par celui de l'Ontario.

La recherche a porté également sur l'étude et la réalisation de l'électronique de mesure en prototype pour la transmission des signaux entre les câbles piézo-électriques et les autres composants du système. Un logiciel a été élaboré pour interpréter ces signaux et assurer leur suivi selon une méthode conviviale. Le système peut être interrogé par un terminal standard et par modem.

Les résultats de l'expérimentation montrent que le système à piézo-électricité effectue le pesage dynamique des véhicules dans les classes de poids circulant normalement sur les autoroutes nord-américaines, qu'il classifie ces véhicules, que la précision des mesures est comparable à celle des systèmes de pesage dynamique à plate-forme, mais que la variance des mesures en est le double. Par contre, il coûte le quart du prix d'un système classique.

17. Mots clés	18. Diffusion
Pesage dynamique, autoroutes, bascules, pesage, poste de pesage.	Le Centre de développement des transports dispose d'un nombre limité d'exemplaires.

19. Classification de sécurité (de cette publication)	20. Classification de sécurité (de cette page)	21. Déclassification (date)	22. Nombre de pages	23. Prix
non classifiée	non classifiée	-		

CDT/TDC 79-005
Rev 88

Canada

Acknowledgement

International Road Dynamics Inc. would like to acknowledge the Ministry of Transportation of Ontario for their assistance and cooperation on this project. The success of the project would have been greatly reduced without this assistance.

SUMMARY

In 1986, International Road Dynamics (IRD) was contracted by the Transportation Development Centre to develop and test a piezoelectric weigh-in-motion WIM system that would weigh, classify and count vehicles, and continuously collect data on traffic operating at normal highway speeds. The goal of the project was to develop and test a piezoelectric weigh-in-motion system, which was to have a target price between $30,000 and $40,000. Such a system would be a tremendous asset to many highway agencies as this price range would be an order of magnitude less expensive than conventional platform weigh-in-motion scales.

The work included the design and construction of prototype electronic hardware to gather signals from the piezoelectric cables and other system components. Software was developed to interpret the cable signals and to provide a user-friendly method of monitoring the scale output. The weigh-in-motion scale could be accessed remotely using a standard computer terminal and telephone modem.

A full scale system was installed for testing and demonstration purposes on six lanes at a site on Highway 7 north of Toronto. A first test site for the piezoelectric cables was provided and prepared by the Saskatchewan Department of Highways and Transportation, the full system demonstration site was by the Ontario Ministry of Transportation and Communications. The piezoelectric weigh-in-motion scale was checked against a conventional platform weigh-in-motion scale located upstream. The collection and analysis of performance data is ongoing. Performance data reported here was collected over an initial 10-month period.

Full system tests at the Highway 7 site found that the piezoelectric WIM reliably measures any vehicle weight normally encountered on North American highways. It classifies vehicle types (which can be defined by the user) and provides weight measurements with an accuracy comparable to that of existing platform WIM systems. Weight measurement variance, however, is double that of platform WIM scales.

The results have shown that an inexpensive weigh-in-motion system based on piezoelectric technology is feasible. Although the piezoelectric system is not as precise as the conventional platform weigh-in-motion scale in determining axle load, the significantly lower price (about 25% of the cost of a conventional system) makes it very attractive. Piezoelectric weigh-in-motion systems can provide inexpensive axle load, vehicle speed, and vehicle classification data.

SOMMAIRE

En 1986, le Centre de développement des transports a confié à International Road Dynamics Inc. la tâche d'étudier et d'essayer un système de pesage dynamique fondé sur la piézo-électricité, laquelle permet le pesage des véhicules, leur classification et leur comptage et assure de plus, le suivi statistique du trafic aux vitesses normales de circulation autoroutière. La recherche avait pour but d'étudier et de mettre au point un système dans une plage de coût entre 30 000 et 40 000$ l'exemplaire. Dans cette gamme de prix, le système de pesage dynamique pourra faire concurrence aux systèmes de pesage dynamiques à plate-forme et intéresser par conséquent les organismes de contrôle routier.

La recherche a porté également sur l'étude et la réalisation de l'électronique de mesure pour la transmission des signaux entre les câbles piézo-électriques et les autres composants du système. Un logiciel a été élaboré pour interpréter ces signaux et assurer leur suivi selon une méthode conviviale. Le système peut être interrogé par un terminal standard et par modem.

Un système en vraie grandeur a été implanté aux fins des essais et de la démonstration, sur l'autoroute 7 nord de Toronto qui comporte six voies. Un premier site d'expérimentation des câbles piézo-électriques avait été fourni et approprié par le Ministère de la voirie et des transports de la Saskatchewan, tandis que le programme de démonstration en vraie grandeur a été pris en charge par celui de l'Ontario. Les résultats du système piézo-électrique ont été comparés à ceux d'un système dynamique à plate-forme situé à l'amont; la saisie des données et l'évaluation de ses performances se poursuivent encore. Les résultats dont il est rendu compte ici concernent les premiers dix mois du programme.

Les résultats du système implanté à Toronto montrent que celui-ci effectue le pesage dynamique des véhicules dans les classes de poids circulant normalement sur les autoroutes nord-américaines, qu'il les classifie selon les catégories définies par l'utilisateur, que la précision des mesures est comparable à celle des systèmes de pesage dynamique à plate-forme sur le marché, mais que la variance des mesures en est le double.

La recherche arrive à la conclusion que la formule du pesage dynamique par piézo-électricité est bonne. Bien que le mesurage des charges à l'essieu n'ait pas la précision des systèmes à plate-forme, le prix du piézo-électrique, qui se situe au quart environ de celui d'un système à plate-forme, le rend quand même attractif pour ce qui touche aux fonctions de mesurage des charges à l'essieu et des vitesses et, aussi, de la classification des véhicules.

TABLE OF CONTENTS

PAGE

1. INTRODUCTION 1

1.1 Background
1.2 History of Weigh-In-Motion

2. STUDY OBJECTIVES 3

2.1 Scope of Work

3. TECHNICAL DEVELOPMENT 4

3.1 Electronic Development
3.1.1 Piezoelectric Cable Characteristics
3.1.2 Data Acquisition Hardware
3.2 Data Collection and Interpretation Software
3.2.1 Weight Algorithm
3.2.2 Environmental Compensation
3.2.3 Data Formatting Software
3.3 User Interface Software

4. OPERATIONAL CHARACTERISTICS 8

4.1 Piezoelectric Cable
4.1.1 Temperature Sensitivity
4.1.2 Effects of Cable Aging
4.1.3 Effects of Roughness Induced Dynamic Loads
4.2 Installation Procedure and Guidelines

5. PROTOTYPE TESTING 15

5.1 Statistical Parameters
5.2 Algorithm Comparison
5.3 General Performance
5.4 Auto Calibration

6. CONCLUSIONS 21

7. REFERENCES 23

TABLE OF CONTENTS
(Continued)

PAGE

LIST OF FIGURES

Figure 1 Cross Section of a Piezoelectric Cable 5
Figure 2 Idealized Output of a Piezoelectric Cable 6
Figure 3 Electronic Interface 6
Figure 4 Typical Installed Cable Output 9
Figure 5 Prototype System Layout 16

LIST OF PHOTOS

Photo 1 Conventional IRD Platform WIM Scale 2
Photo 2 Cutting Slot In Pavement 11
Photo 3 Piezoelectric Cable Alongside Slot 11
Photo 4 Leveling Cable in Slot 12
Photo 5 Embedding Cable in Epoxy 12
Photo 6 Installed Cable 13

LIST OF TABLES

Table 1 Results of Algorithm Testing 18
Table 2 Results of General Performance Testing 20

APPENDICES

APPENDIX A: Piezoelectric WIM Classifier Software Flowchart
APPENDIX B: Typical Output Tables
APPENDIX C: The IRD 1060P Specifications
APPENDIX D: Sensor Specifications
APPENDIX E: Raw Data From Testing

1. INTRODUCTION

This report presents the work and results of a joint program undertaken to develop a highway Weigh-In-Motion (WIM) system based on piezoelectric sensor technology. The work was performed by International Road Dynamics Inc. (IRD) of Saskatoon under a contract with the Transportation Development Centre of Transport Canada. Piezoelectric cables were tested at a site provided and prepared by the Saskatchewan Deparment of Highways and Transportation. A full scale system was installed for testing and demonstration purposes at a site on Highway 7 in Toronto made available and prepared by the Ontario Ministry of Transportation and Communications (MTC). Evaluation of the prototype system has been on-going over a period of 10 months and will be continuing for another 12 months.

1.1 Background

The efficient planning, construction, and maintenance of a highway system requires extensive data on the type and number of vehicles using that system. The data allows an agency to determine:

a) vehicle frequency for calculation of utilized capacity and potential expansion requirements,
b) vehicle load information to determine structural requirements,
c) an estimate of remaining life for rehabilitation strategy.

The need for comprehensive traffic data is not new, and has been realized since the 1950's (1 & 2). In the past, accurate data collection was not felt to be important and was costly. Very low traffic volumes and small percentages of heavy trucks did not make the data feasible to collect. More recently however, a number of factors have come about that will make comprehensive traffic data more important than in the past. General shifts in truck configurations are occurring and will continue to do so due to deregulation within the U.S. and Canadian trucking industries. Highway agencies have become aware that each vehicle configuration contributes differently to the rate of highway deterioration. Comprehensive data provides the potential for economic studies, more efficient planning and design, and a verification of weight enforcement programs. (3)

Weigh-In-Motion can be a large component of the data collection process and supply much of the data needs. WIM has the potential to monitor axle weights on a continuous, unbiased basis.

1.2 History of Weigh-In-Motion

Since its inception in the 1950's, the concept of WIM has undergone many combinations and permutations. Many technologies have been explored in efforts to devise low cost, yet reliable WIM systems. Some of the technologies that have been studied include platform scales, bridge WIM, capacitance mats and more recently, piezoelectric cables.

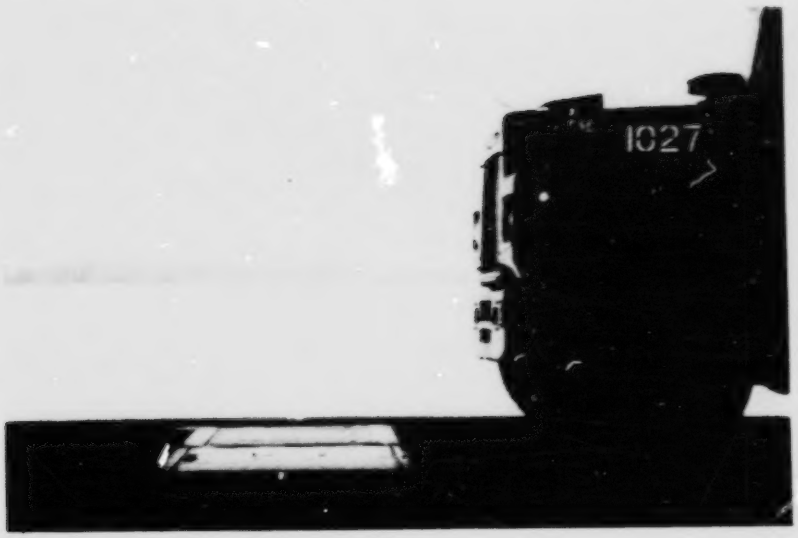


PHOTO PLATE 1 PLATFORM WIM SCALE

Work done in the 1970's at the University of Saskatchewan led to the development of a platform WIM scale based on a single load cell, and loading frame (4). The scale was able to operate in extreme climatic conditions with little maintenance.

A platform weigh-in-motion scale can provide quite accurate axle weight data (accuracies from 4 to 6% depending on operational conditions such as roughness, and vehicle types). However, platform scales are relatively expensive to purchase (several hundred thousand dollars). Platform scales are also expensive to install and generally require shutting down the lane completely for a few days. Despite the high cost, and extensive installation, the reliability and accuracy of these scales have made them the dominant scale in North America. Currently, platform scales are used as a standard by which to compare new systems such as piezoelectric. Photo plate 1 shows a typical platform WIM scale.

Bridge WIM was explored in a study by the Oregon Department of Transportation in 1986 (5). Although reasonable accuracies are available with bridge WIM, three major problems exist with their use. First, only certain bridge types are suitable. Second, the system can only operate during low traffic periods due to potential interference with other traffic on the bridge. Lastly, a crew is generally required to operate it, which reduces the potential for continuous operation.

Capacitance Mat WIM systems have recently seen limited success in South Africa (6). The system can generally be obtained for under one hundred thousand dollars. The main drawbacks of a capacitance mat system are the reliability of the mat (which is subject to damage and requires high maintenance), and the need for a crew to set up and operate the system.

Piezoelectric technology offers a promising alternative to the above mentioned WIM systems. The application of piezoelectric technology to high speed load sensing has only recently become practical. The fundamentals of piezoelectrics have been known since at least 1928 (7). Only recently however has the technology of data acquisition been applied to analysing piezoelectric signals for weight determination. A WIM system based on piezoelectric cables can offer a very low cost and are easy to install. The system can provide not only weight data, but also vehicle classification. This is due to the layout of the axle sensing cable and inductive loops.

Recently, piezoelectric technology has contributed to the success of various weigh-in-motion systems in the U.K. The European systems are installed predominantly in portland cement concrete pavements (PCC). However, PCC pavements are generally very rigid, with low overall deflections. The majority of North American pavements are asphalt concrete (AC) pavement. In Canada, where traffic volumes are generally low, these AC pavements are quite thin, having large in-service deflections. These large deflections create significant problems in using piezoelectric cables for weigh-in-motion.

2. STUDY OBJECTIVES

This project was initiated to develop and test a piezoelectric WIM system that could weigh, classify and count vehicles, and continuously collect data on traffic operating at normal highway speeds. The Ministry of Highways of Ontario provided a suitable site for the prototype piezoelectric system, located upstream of an existing platform scale on highway 7 in Ontario (see Figure 5). The target price of a four lane system was to be below $40,000. Specific objectives of this study were;

a) to develop a piezoelectric axle detector.
b) to modify existing counter/classifier electronics for use with the new detector.
c) to integrate the axle detector and the electronics into a low cost WIM system capable of gathering all relevant highway data.
d) to demonstrate a multi-lane prototype installation.
e) to validate the performance of the system by comparing the obtained results with an existing data collection system consisting of a platform weigh-in-motion scale.

2.1 Scope of Work

The following technical items were to be addressed by IRD during the course of the development;

a)Specify the functional requirements for electronic hardware to process the signal from the piezoelectric cable sensor. Design, assemble, and bench test the electronic system.

b)Develop software to monitor and interpret the signals from one cable sensor and two inductive loop sensors per lane. Expand the system to accept data from multiple lanes to collect, tabulate and format data into records usable by highway agencies.

c) Develop user friendly interface software. Develop software packages for polling the system remotely over a telephone line or radio frequency link.

d) Investigate the operational characteristics of the piezoelectric cable, including signal deterioration with time and the effect of temperature on weight sensitivity and signal quality.

e) Test various configurations of the cable/structure frame assembly in the lab and on the field, and develop a suitable design for the in-road WIM axle detector.

f) Investigate installation techniques in order to minimize traffic disruption, pavement modifications, and installation time.

g) Install and calibrate a six lane prototype piezoelectric system in the Toronto area, on Highway 7, near on existing IRD-WIM site and calibrate using known axle loads.

h)Monitor the Low Cost WIM operation and compare readings with the data collected by proven equipment (the existing IRD-WIM). Fine tune electronics, software, and the vehicle weight calculation algorithm.

i)Determine the accuracy of axle load measurements as a function of vehicle weight, configuration, and speed. Determine the percentage of vehicles for which weight is improperly registered due to lane straddling and any other system errors.

3. TECHNICAL DEVELOPMENT

System technical development was broken into three areas involving the development of; sensing electronics; software to collect and interpret vehicle weights; user interface software.

3.1 Electronic Development

3.1.1 Piezoelectric Cable Characteristics

Initial development consisted of analysing the output of a piezoelectric cable. A cross section of a typical piezoelectric cable is shown in Figure 1. An idealized output with time for such a cable is shown in Figure 2. Past literature indicated that for weigh-in-motion purposes, a pre-mounted (referred to as Class 1) cable would have to be employed to get consistent accuracy. The vibracoax cable as detailed in Appendix D was selected.

The data acquisition system would have to be able to digitize the analog signal in real time.

3.1.2 Data Acquisition Hardware

The necessary data acquisition electronics had to meet the following criteria:

a)Amplify the output signal from the cable with little distortion.
b)Allow convenient access for field calibration and servicing.
c)Provide all necessary signal levels, references, and connections for interfacing 6 lanes of sensors to a computer.

Several circuits were tested in the lab and at field test sites. The final design utilizes a high impedance charge amplifier circuit to amplify the signals from the cable, and passive filters to condition the signal and reduce signal noise.

A modular packaging system is used to house the new sensor interface and existing IRD loop interfaces, in a configuration that allows easy access for field calibration and servicing. The electronic interface converts the raw signals obtained from up to twelve piezoelectric cables and twelve inductive loops into the signal levels required by the computer. It also provides the computer with ground and signal baseline references. A functional schematic of the electronic system is shown in Figure 3.

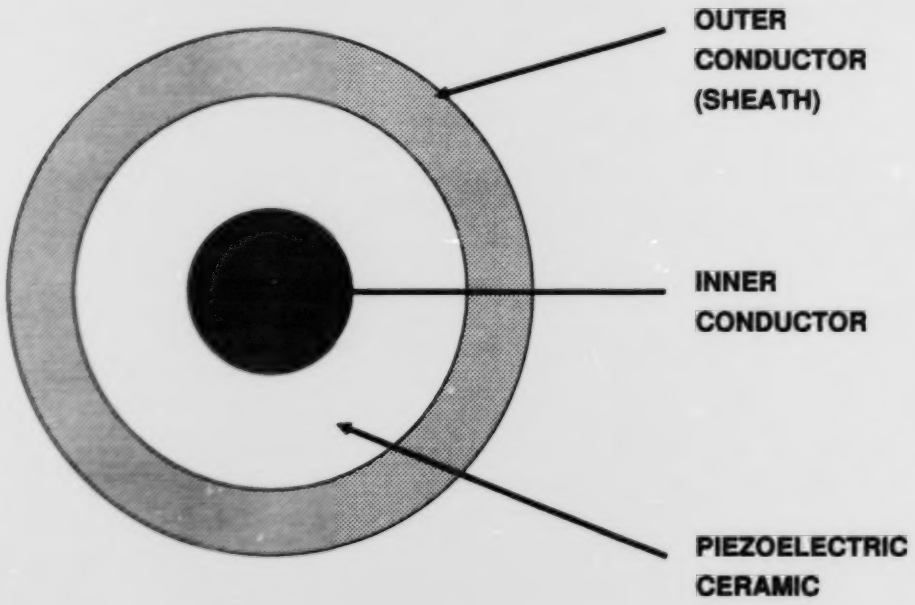


FIGURE 1
CROSS SECTION OF A
PIEZOELECTRIC CABLE

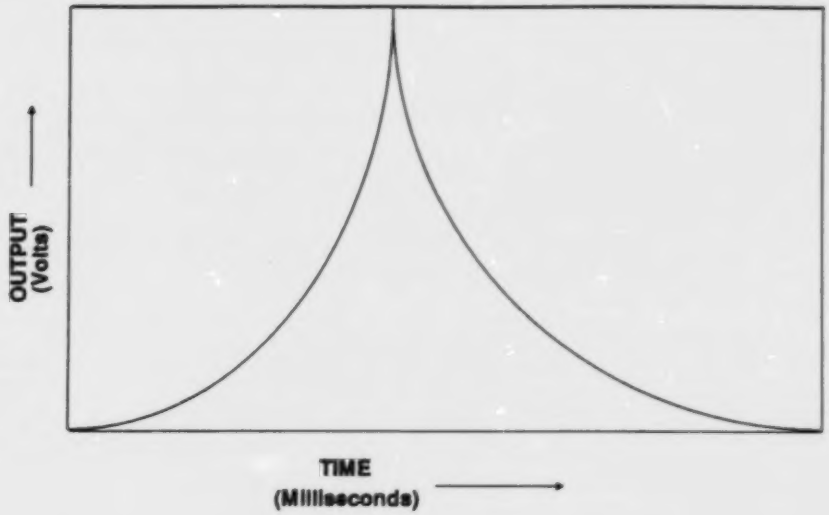


FIGURE 2
IDEALIZED OUTPUT OF A
PIEZOELECTRIC CABLE

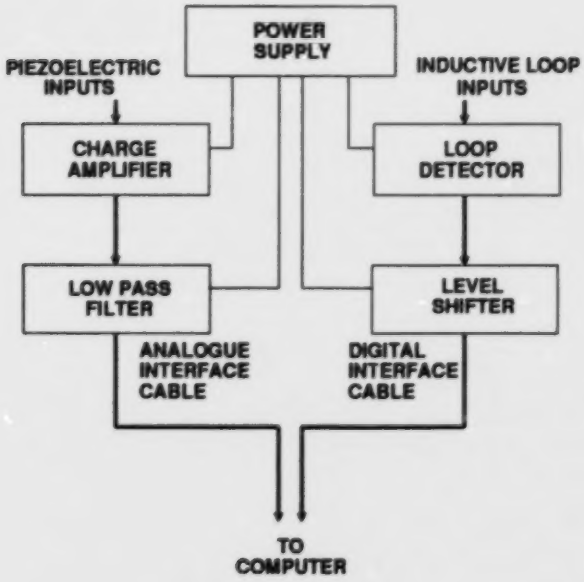


FIGURE 3
ELECTRONIC
INTERFACE

3.2 Data Collection and Interpretation Software

The data collection and interpretation software development was broken into the following components;

a) Develop an algorithm for monitoring and converting the signal from the cable into weight.
b) Develop an environmental compensation algorithm (ie:temperature, road conditions, etc.)
c) Develop software to format the data from multiple lanes into a form usable by highway agencies.

3.2.1 Weight Algorithm

Determining the portion of the piezoelectric signal that correlated the best with axle weight proved to be the most difficult portion of the project. The piezoelectric sensor is sensitive to several factors other than weight. Variations in vehicle speed, tire type, and pavement type vary the shape of the signal. This is further complicated in that the weight algorithm (the portion of the software that interprets and determines the weight from the signal) had to be simple enough that it could be performed while an axle was passing over the sensor (within the computational limits of the computer), and provide consistant results for a variety of pavement types. Three different interpretation philosophies were tested during the project, the first being a baseline to peak interpretation, the second being a minimum to maximum interpretation, and the third being a digital integration of the signal. The most repeatable results (both practically, and theoretically) were obtained with the digital integration algorithm. The theoretical derivation associated with this algorithm requires the vehicle speed being considered in the weight calculation. This proved beneficial in that the weight of the axle is directly compensated for variations associated with vehicle speed. The results of testing associated with this algorithm are presented in Section 5.0.

3.2.2 Environmental Compensation

The results from field tests of the cables indicated that a simple temperature compensation scheme would not be adequate because the temperature response of the cable was affected by road characteristics. A global compensation scheme was required. The scheme adopted indirectly compensates for environmental conditions by recalibrating the scale on a continuous basis by monitoring system output for a number of vehicles. This is discussed further in Section 5.3.

3.2.3 Data Formatting Software

Data formatting software receives the calculated weights from the 6 lanes of sensors. It creates and stores a vehicle record that contains the vehicle speed, length, axle spacings, type, weight, and time of passage. The vehicle record is used by table formatting programs to create histogram tables on:

- speed
- length
- axle weights
- gross vehicle weights

All data is stored in memory until accessed by the user. See Appendix A for a software flow chart, Appendix B for typical system output tables.

3.3 User Interface Software

The user interface software is a menu driven, user friendly display. The software provides the following information to the user in a convenient format:

- real time viewing of vehicle passage
- setup parameters for data collection
- viewing of collected data
- system health monitors
- site calibration parameters
- system configuration parameters

Access to the program is protected by three levels of passwords which are:

a)User	- accesses stored data
b)Maintenance	- accesses data and calibration parameters
c)Engineering	- accesses data, calibration, and system parameters.

A serial terminal or a computer running any software package that can emulate a serial terminal, is used to communicate with the computer at the site. Remote access may be achieved with the use of a modem (either telephone or radio frequency) and a communication package. The computer interface has been configured to be compatible with a variety of popular communication programs (CROSSTALK, PROCOM, PCTALK, etc.). This wide variety of options allows for set up of a polling system that is most appropriate for specific user needs.

4. OPERATIONAL CHARACTERISTICS

Three areas dealing with the operational characteristics of the system were looked at in this project. The first area deals with the system performance and factors affecting the piezoelectric cable. The second deals with performance of the system as a function of installation. The last deals with system accuracy, and testing of the prototype system.

4.1 Piezoelectric Cable

The in-road sensor consists of a VIBRACOAX TYPE 30-P1-C sensor embedded in an aluminium frame with an epoxy resin (see Appendix D). This sensor has the following properties:

a) resistant to shipping damage
b) resistant to corrosion
c) adjustable to road contours
d) convenient to install
e) independent of temperature

The sensor is installed in a 45 mm X 45 mm slot in the road surface. A flexible epoxy which matches the road's expansion and flexibility properties is used to secure the sensor in the slot.

Figure 4 shows a typical signal for a 7-axle truck. As can be seen, the actual response of the cable is somewhat different from the ideal response shown in Figure 2. This is due to variations in installation and pavement deflection.

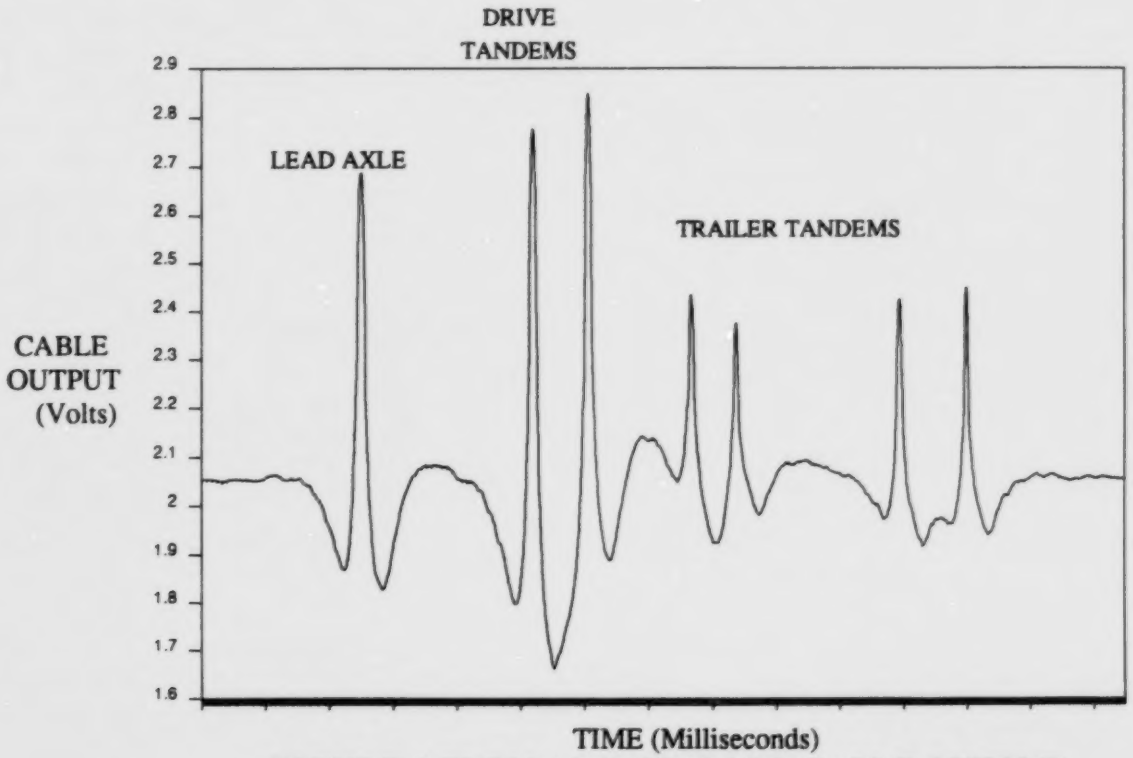


FIGURE 4 TYPICAL INSTALLED CABLE OUTPUT

Two major issues were of concern regarding the use of piezoelectric cables for weight collection under Canadian conditions. The first has to do with the effects of temperature change on cable performance. The second has to do with the long term durability of the cable under climatic and operational extremes. The prototype installation associated with this study addressed both of these issues as indicated in the following sections.

4.1.1 Temperature Sensitivity

Piezoelectric cables have a varying output depending on the temperature. To date, studies in the U.K. (8) have shown that variation in cable output due to temperature effects are very small and predictable, and can be compensated for easily. However, temperature variations can cause significant changes in the performance of the pavement, which in turn effects the measured signal. This is especially true in Canada where asphalt concrete pavements undergo relatively large in-service deflections. Pavements, when warm undergo significantly larger deflections than when cool. This variation is not easily predictable, and varies with the pavement type and thickness. The subsequently larger deflections cause erroneous cable readings. The following observations were made from the prototype installation;

- the output signal changed by up to 50% in the temperature range of -40°C to 70°C (due to pavement deflection)
- the temperature sensitivity of any one cable (independent of deflection) was constant during the duration of the test
- no 2 cables had the same temperature sensitivity
- daily temperature variations did not significantly affect the cable output (ie.less than 1%)

The following conclusions were drawn from the observations:

a) The sensor response is temperature independent.
b) The method and quality of installation affects the sensor's temperature response in the road.
c) The road construction (subgrade materials, pavement thickness etc.) affects the temperature response in the road.

The above conclusions indicated that the temperature response of the sensor would have to be defined for each and every site if direct temperature compensation were to be used. Alternatively, it was determined that a self calibrating system as described later in Section 5.4 was more appropriate.

4.1.2 Effects of Cable Aging

The cables installed at Highway 7, in Toronto, have been operating for over 18 months. Some cables have had over 10 million axles pass over them during this time. To date, the output signal has not deteriorated significantly in either size or shape.

During the course of the project, 3 sensors failed. The cause of failure was isolated directly to poor installation quality. Remedial action was taken to repair or replace the failed sensors and specific installation guidelines (sec. 4.2) were developed to ensure good installation quality in the future. As a result of the installation experience, guidelines were developed concerning the type of roadway and profile most suitable for cable installation.

PHOTO PLATE 2 CUTTING SLOT IN PAVEMENT

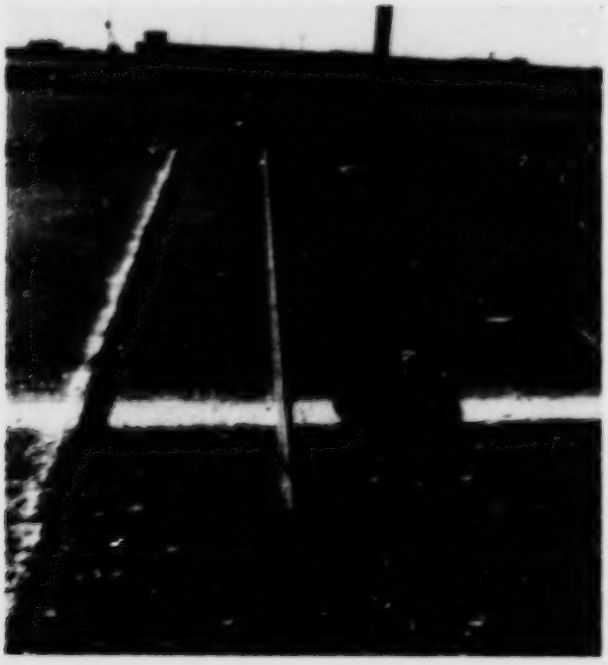


PHOTO PLATE 3 PIEZOELECTRIC CABLE LAID ALONGSIDE SLOT

PHOTO PLATE 4 LEVELING CABLE IN SLOT

PHOTO PLATE 5 IMBEDDING CABLE IN EPOXY CEMENT

PHOTO PLATE 6 INSTALLED CABLE

4.1.3 Effects of Roughness Induced Dynamic Loads

Papagiannakis (10) found that highway trucks oscillate as they travel on a paved surface. The oscillations vary about the static weight of the truck at approximately 3hz, with the magnitude of the oscillation being between 4 and 40% depending on road roughness and vehicle speed. The higher magnitudes are at higher speeds and/or on rougher pavement.

An axle being weighed on a platform scale is in contact with the scale for a much longer time than the same axle passing over a piezoelectric cable at the same speed. As a consequence, the weight provided by a platform scale will have accounted for the dynamic load variation due to the physical size and damping of the scale. As the cable contact area is very small, a piezoelectric system on the other hand will measure the load, plus any dynamic effect at the instant the load was obtained. As a result, a piezoelectric system cannot be any more accurate than the variation of the load due to pavement roughness.

Another important conclusion from Papagiannakis's work is that dynamic loads are spatially reproducible. In other words, for a given vehicle, at a given speed, on a given pavement, the pattern of load variation will repeat itself. This is of important consequence when evaluating a piezoelectric WIM system. Using a single vehicle, at a constant speed, the system will give results which are consistent. This spatial reproducibility does not accurately simulate the actual loading

conditions where a system will have to determine weights of a variety of different vehicles at varying speeds in a more random nature.

4.2 Installation Procedure and Guidelines

The sensor is installed in a 45 mm X 45 mm slot, which is made by making multiple saw cuts with a grinder type blade. The sensor is secured within the slot with a flexible epoxy. Photo plates 2 through 4 show a typical installation. It takes 2 to 3 hours to install one cable. A four lane installation, including sensing loops and associated cabling trenches take less than four days. One benefit of installing a piezoelectric system is the ability to have a lane reopen in 2 to 3 hours. This causes minimum traffic disruption and delay.

Experience obtained from the prototype installation has allowed the compilation of a list of preferred site criteria and installation guidelines. Ideally, a piezoelectric WIM system should be installed at a site where;

a) the approach to the system is level and straight, in a road section where vehicles will tend to be at constant speeds (not accelerating of decelerating for traffic control.

b) the pavement cross section is fairly uniform with little elevation variance across the wheel paths. Ideally, the variation of the surface profile should be less than 1 cm/m.

c) the pavement is a minimum of 10 cm thick, with an overall in-service deflection of less than 0.5 mm/tonne.

d) the traffic pattern is consistent, with the majority of the vehicles following a fairly consistent wheel path.

e) a surface profile of the site in terms of surface roughness can be easily obtained. To achieve consistency, and further enhance system evaluation, the profile should be recorded, and compatible with the International Roughness Index (IRI), developed by the World Bank.(9).

The following guidelines should be followed when installing piezoelectric cables;

a) The piezoelectric cable should be installed between 5 and 10 mm below the pavement surface.

b) The cable should be placed so it is within 2^{o} of being perpendicular to the traffic flow (88° to 92° from the traffic flow).

c) The cable should be installed in warm, dry weather, with the pavement temperature being close to 5° C.

d) The sensor should be installed so it matches the cross section of the pavement. The cable depth should be consistent across the wheel paths (variation of less than 2 mm depth).

e) The final signal consistency should not vary by more than 5% across the wheel path, and by more than 7% across the lane.

It should be noted that the prototype installation in Ontario was in a fairly thick (10 cm) asphalt concrete pavement. Subsequent systems were installed, in Alberta and Saskatchewan. Testing of these systems continues, to monitor performance in thinner asphalt concrete pavements. These later studies will provide insight into the durability of piezoelectric systems in extreme climate conditions, and will be reported at a later date under separate cover.

5.0 PROTOTYPE TESTING

A prototype system was installed on Highway 7, north of Toronto, at the intersection of Highway 7 and Dufferin St. It is downstream from an existing IRD platform WIM site with three lanes having hourly traffic volumes approaching 500 vehicles. The average asphalt thickness is 10 cm. The approach to the sensors is fairly smooth. A traffic light 500m upstream from the site means some vehicles are still accelerating over the sensors, causing some reduction in the accuracy of all measurements. Figure 5 shows the layout of the site. Note that in 3E lane, multiple cables have been installed. This is to facilitate testing of accuracy improvements using multiple cables, and to study effects of differential cable spacing.

Two types of testing were performed, the first comparing different weight collection algorithms, by using a single truck with known static weights, and the second using a series of random vehicles from the traffic stream. When random vehicles were selected from the traffic stream, the static weights of the vehicle axles were obtained by stopping and weighing these trucks with portable axle scales.

5.1 Statistical Parameters

For purposes of this report, the following parameters have been defined for statistical analysis:

a) Error (E) is defined as the average difference between the static (Ws) and WIM weights (Ww):

$$E\ (\%) = \frac{Ww - Ws}{Ws}$$

b) Mean (or average) error is defined as the algebraic average of all the E values.

c) Standard Deviation of error is defined as the statistical standard deviation of all the E values.

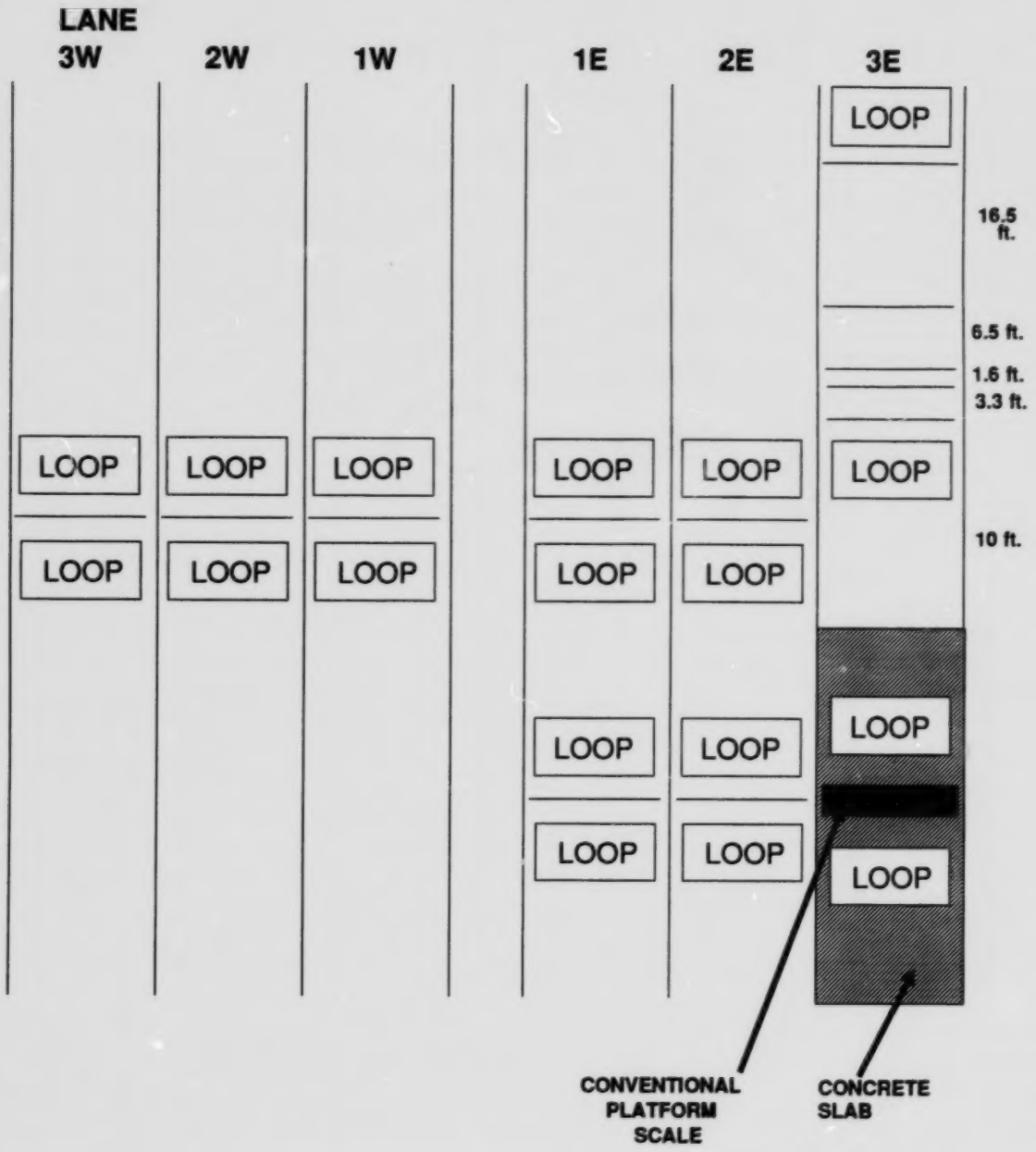


FIGURE 5

PROTOTYPE SYSTEM LAYOUT

HIGHWAY 7

NORTH OF TORONTO

The mean error relates to how close the WIM weights compare to the static weights on average. Positive mean errors indicate that the WIM weights are higher than the static weights, while negative mean errors indicate that the WIM weights are lower than the static weights on average. The objective when calibrating a WIM system is to have 0% mean error for as many axles or axle groups as possible. Usually it is very difficult to have all axle and axle groups at 0% mean error, and in cases such as these, the system is set to provide 0% mean error on the gross vehicle weight (GVW).

The standard deviation of error is a measure of the scatter of the error values. Lower standard deviation of error values for a given data set indicate better reproduceability of the system. Perfectly correlating systems (or systems with no error) should have a standard deviation of error of 0%. This parameter was used to compare the variation or repeatability of the three weight determination algorithms previously mentioned.

5.2 Algorithm Comparison

As previously mentioned, three different weight determination algorithms were developed and tested during the course of the project. The three algorithms were the baseline to peak, minimum to peak, and integrating. These algorithms were compared by testing utilizing a single truck with known static weights as a test vehicle. The vehicle made multiple passes over the piezoelectric sensors, at various speeds. The test vehicle used was a 6 axle semi trailer unit, with an air lift axle in the centre of the trailer. Several runs were made with the lift axle down, while several other runs were made with the lift axle up. This in effect provided two test vehicles, as the weight of associated axles changes when the position of the lift axle is changed. The speed of the vehicle during this testing was varied from 20 to 80 km/h, and the vehicle passed over both the conventional load cell based platform WIM, and the piezoelectric WIM systems.

In general, the three algorithms provided extremely close results as far as the detection of an axle, the determination of vehicle speed, and the subsequent spacing of axles and vehicle configuration were concerned. However, it was found that the only the integrating algorithm was able to confidently determine the axle weights. As a result, this algorithm was the only one which was further tested. The results of the single truck test program for the integrating algorithm are shown in Table 1. Note that results of testing for the other two algorithms are not included, as these algorithms were deemed unacceptable from a repeatability point of view, and were subsequently abandoned. Table 1 compares the performance of the conventional load cell platform WIM to the piezoelectric WIM, for 1, 2 and 3 cables. Results using 2 and 3 cables were obtained by averaging the output of the cables. (Note that although 4 cables were located in the lane used in the testing, only 3 cables were used for the test. This is due to variable readings associated with cable 4, which failed during the testing of the second algorithm test. The cause of cable failure was attributed to an installation flaw, where the cable lead sheared off of the cable)

5.3 General Performance

Once the weight determination algorithm had been selected and refined, the overall performance of the system was tested utilizing a random selection of trucks from the traffic stream. The static

TABLE 1
RESULTS OF ALGORITHM TESTING
1 VEHICLE, 33 PASSES

AXLE GROUP	NUMBER OF SAMPLES	CONVENTIONAL PLATFORM		1 PIEZO CABLE		2 PIEZO CABLE		3 PIEZO CABLE	
		MEAN *	STANDARD DEVIATION *	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION
FRONT STEERING	33	-3%	5%	0%	9%	0%	5%	0%	5%
TANDEM AXLES	128	0%	8%	0%	11%	+0.5%	7.9%	+1%	6.8%
GVW	33	-2.4%	4%	-0.5%	7.9%	-0.5%	4.9%	-0.5%	4.8%
SINGLE AXLES	21	+3%	5%	-4%	6%	-6%	6%	-8%	4%

* MEAN AND STANDARD DEVIATION OF ERROR

TESTING DURING NOVEMBER, 1987
VEHICLE SPEED 30 to 80km/hour

weights of these vehicles were determined by stopping these vehicles and weighing them using portable axle load scales. As in the algorithm testing, the vehicles passed over both the conventional load cell based platform scale and the piezoelectric WIM systems. Vehicle speeds varied from 28 to 62 km/hr. Note that as the weight algorithm accounts for speed directly, no appreciable increase in accuracy is realized at any particular speed.

The results of the random testing are shown in Table 2. The ability of each WIM system to classify vehicles was tested by conducting a manual classification count for an approximate 4 hour period. During this period, approximately 350 vehicles were classified, and the result of the manual count were compared to the classifications obtained from each WIM system. The piezoelectric WIM system correctly classified 98% of the vehicles while the conventional platform WIM system classified 85% fo the vehicles correctly. This can be attributed to two things; first, the piezoelectric WIM system can more accurately determine axle presence, and the spacing of adjacent axles, and second, the classification portion of the software allows more bins to be defined.

The test results indicate that for a single cable installation, the piezoelectric system has approximately twice the variance of the platform system for all axle groups (including gross vehicle weight) on all but single, dual tired axles. Using multiple cables however improves the response of the system, and a three cable piezoelectric system has a 50% higher variance than the platform. In all cases, the gross vehicle weight (GVW) determination is always more accurate using a platform scale than determination of the weight of an axle group using the piezoelectric system. It should be noted here also that the conventional WIM system at the Highway 7 site has a significantly higher standard deviation than that experienced at other sites using this equipment. Independent reports (available on request) have reported standard deviations as low as 3% for GVW and 4% for individual axles. The higher standard deviation of the platform WIM scale at this site may be due to the variation in speed as a result of the traffic lights located upstream of the scale. Speed determination is not as accurate, and not accounted for directly with the conventional scale.

The following conclusions can be made by comparing the test results from the two systems:

1. The accuracy of the speed, length, and axle spacing measurements from the low cost system is comparable to the platform WIM.
2. In general, the weight measurements from the low cost system have double the variance of the platform WIM (for systems with one or two cables).
3. The weight accuracy of the combined output of three cables from the low cost WIM is comparable to the platform WIM.

The system was operated for a 10 month period, during which continuous data was collected. Overall, the system accuracy appeared to remain at least as good as the random vehicle testing discussed above. Further testing is being performed to monitor the performance of the system as the piezoelectric sensors age, and as the pavement in which the senors are installed deteriorates.

Data for the algorithm testing, the random vehicle testing, and representative data from the low cost system is included as Appendix F.

TABLE 2
RESULTS OF RANDOM TESTING

AXLE GROUP	N	CONVENTIONAL PLATFORM		1 PIEZO CABLE		2 PIEZO CABLE		3 PIEZO CABLE	
		MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION	MEAN	STANDARD DEVIATION
FRONT STEERING	28	-1%	5%	-1%	12%	-4%	10%	-4%	8%
TANDEM AXLES	44	-1%	8%	-2%	15%	-2%	15%	-1%	12%
GVW	28	0%	4%	-1%	9%	-2%	8%	-2%	6%
SINGLE AXLES	15	0%	10%	-1%	10%	0%	9%	+1%	10%

28 VEHICLES
TESTING DURING NOVEMBER, 1987
VEHICLE SPEEDS 28 to 62 km/hour

5.2 Calibration

As mentioned, calibration of a piezoelectric WIM system is a very critical factor in obtaining resonable accuracies. The accuracy data presented in this report was partially obtained from testing of the prototype system using two standard vehicles at varying speeds. As indicated by Papagiannakis, this may not yield the most reliable calibration for an in-service condition.

A more representative method of calibrating the system may involve the weighing of random vehicles in a traffic stream, both with the piezoelectric system, and by using portable static scales. In this manner, the system will be subjected to load variations which are not reproductions, but are truly random.

Another major problem in calibration results from the effects of environmental changes. These environmental changes include temperature, both of the cable and of the pavement. Another influencing environmental factor is the variation of pavement moisture content with season. The changes in moisture content affect the strength properties and subsequent deflection of the pavements.

While the effects of temperature on cable sensitivity can be accounted for (8), the other factors such as pavement temperature and moisture content are not as easily predicted. In order to calibrate the system correctly, calibrations must be carried out at a variety of pavement temperatures and moisture contents. This method of calibration would be very time consuming and costly.

A self calibration procedure was developed which partially alleviates the above mentioned problems. Previous studies (11) have shown that the front axles of certain heavy vehicles are very consistent. For example, fully loaded 5 axle semis were found to have a mean weight of 9000 lbs, with a standard deviation of 1000 lbs. The procedure involves having the system monitor the last 100 or so trucks, and computing the mean front axle weight, and standard deviation continuously. The results of the real time monitoring are compared to the known average and the system automatically adjusts the baselines so that the actual front axle weight distribution matches the assumed distribution. By having the system self calibrate, seasonal effects are automatically adjusted for.

6.0 CONCLUSIONS

A new Weigh-In-Motion System based on piezoelectric sensor technology has been developed and tested. The new WIM system can provide continuous, comprehensive vehicle type and weight data using low cost sensors embedded in existing highway pavements. The WIM classifies vehicle types (which can be defined by the user), as accurately as existing platform WIM systems. The new WIM reliably measures any vehicle weight normally encountered on North American highways. The cost of the new system is about 87% lower than existing platform WIM systems. This provides highway agencies with a low cost method of expanding their traffic data collection programs, and enable them to more accurately monitor highway traffic characteristics.

The new piezoelectric WIM sensors are low cost, durable and easy to install in existing portland cement, or asphalt concrete pavements. Systems have been in place for 18 months, and show no noticeable degradation in signal. Installation methods for the sensors have been refined to prevent premature failure. The prototype installation has proven that the sensors are sufficiently durable for use in Canadian conditions.

The system enables remote operation and setup of the system. Although the piezoelectric WIM system is not as accurate as the conventional platform WIM systems, the system capabilities have been identified. A method of self calibration to account for seasonal variations in pavement response has been implemented into the system software.

7. REFERENCES

(1) Lee, Clyde E., Concepts, History and Future of in Motion Weighing, Second National Conference on Weigh-in-Motion , Atlanta, Georgia, 1985.

(2) Bosch, Harold R., Federal Highway Administration Weigh-In-Motion Research Program, Past--Present--Future, Second National Weigh-in-Motion Conference, Atlanta Georgia, 1985.

(3) Bergan, A.T., Phang, W.A., Derkson, K., and Taylor, B., Developments in Piezoelectric Weigh-In-Motion Systems, A paper presented at the 1987 Annual Conference of the Roads and Transportation Association of Canada, Saskatoon, 1987.

(4) Roads and Transportation Association of Canada, Dynamic Weigh In Motion Scales, ISBN 0-919098-32-0.

(5) The Oregon Department of Transportation, Final Report-Weigh In Motion and AVI Demonstration Project, September, 1986.

(6) Basson, J.E., Vissar, A.T., and Freeme, C.R., In Motion Weighing of Vehicles on Heavily Trafficked Roads, Paper No. 870677 presented at the January 1988 meeting of the Transportation Research Board, Washington D.C., 1988.

(7) Tiersten, H.F., Linear Piezoelectric Plate Vibrations, Plenum Press, New York, 1969.

(8) Banke Jorgen, Use of Vibracoax Cables and Counting Devices for Axle Load Measurement, OECD - TRRL Seminar - Freight vehicle overloading and Load Measurement, June, 1986.

(9) Sayers, Gillespie, and Queiroz, The International Road Roughness Experiment: Establishing Correlation and a Calibration for Roughness Measurements, World Bank Technical Paper Number 45, 1986.

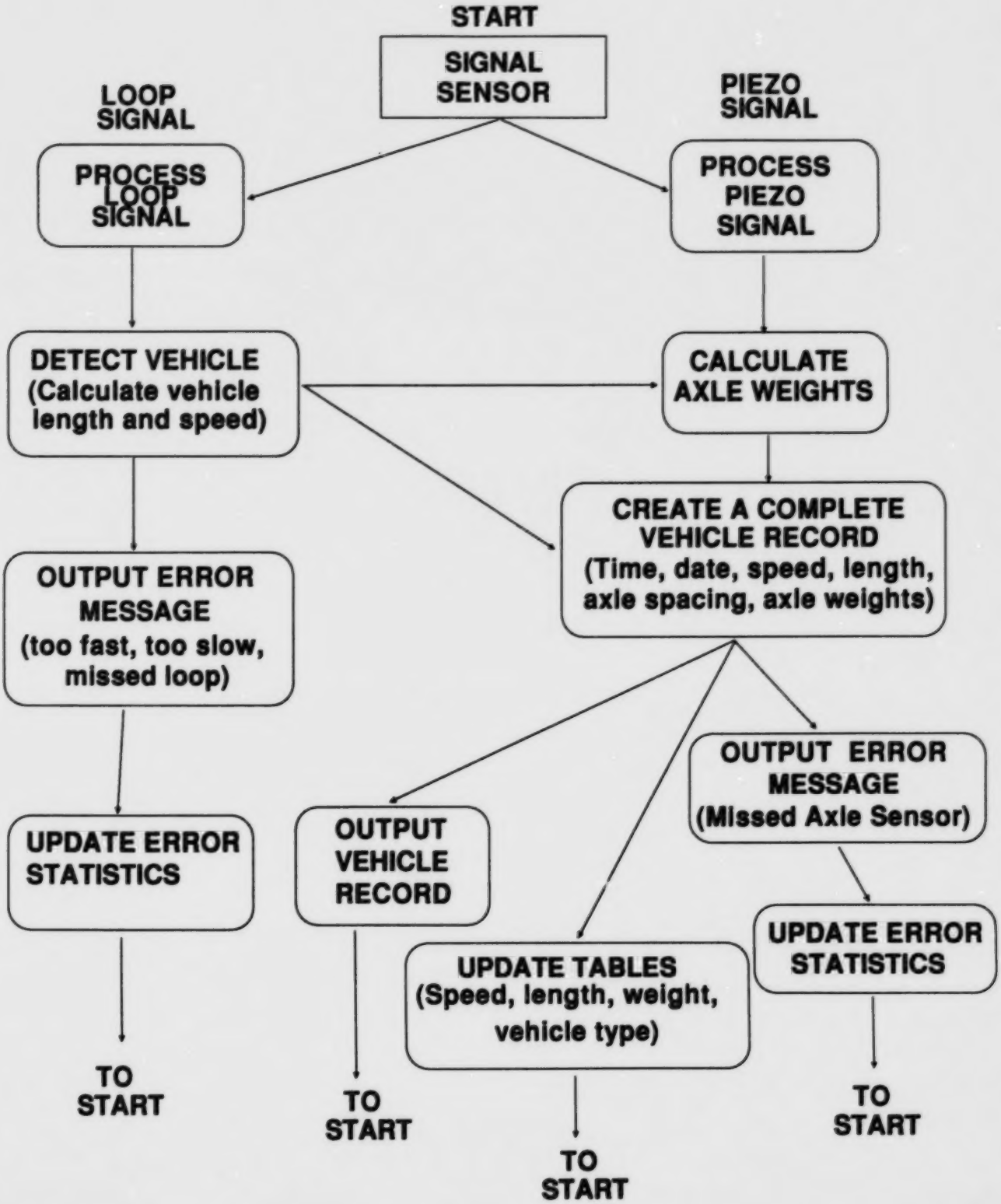
(10) Papagiannakis, A.T., Impact of Roughness-Induced Dynamic Load on Flexible Pavement Performance, Ph.D. Thesis presented to the University of Waterloo, Waterloo Ontario, 1987.

(11) Bergan, A.T., and Papagiannakis, A.T., Traffic and Truck Loading Analysis Using WIM Scale Scale Data, A Paper presented at the January 1983 Meeting of the Transportation Research Board, Washington D.C., 1983.

APPENDIX A

PIEZOELECTRIC WIM CLASSIFIER SOFTWARE FLOWCHART

PIEZOELECTRIC WIM SOFTWARE FLOW CHART



APPENDIX B

TYPICAL OUTPUT TABLES

INDIVIDUAL VEHICLE DATA TABLE*

Information is condensed and stored in readable format.

Data Set	Example
1. Axle Spacing	37 16 50 16
2. Axle Weights	4.5 6.8 7.2 8.0 8.0
3. Actual Group Weights and Allowable Wts( )	4.5(5) 14(16) 16.3(16)
4. Actual GVW and Allowable GVW( )	14.8 (37)
5. Speed	102 km/h
6. Time	3/31/10:05:49
7. Lane	1
8. Vehicle Class	7
9. AVI Number**	76358 (8 characters)***
10. Other Information	.....16 characters

* Individual vehicle data storage is configured remotely to only collect raw records for specified vehicle types, for specific data items. (eg. collect all class 9 axle weights and GVW) and for specified overweight vehicles.

** User programmable to receive other information on the RS232 port and change the heading message.

*** AVI system records AVI ID number from an RS232 device and attaches it to the corresponding extracted vehicle record.

CLASSIFICATION TABLE

Daily by Lane
Classification*

Time	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0 - 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1 - 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2 - 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3 - 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4 - 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5 - 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6 - 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7 - 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8 - 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9 -10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15-16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16-17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17-18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18-19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22-23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23-24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* Maximum number of classifications is 24.

SPEED DISTRIBUTION TABLE
Number of Vehicles

Daily by Lane
Speed by Lane
Classification

e.g. A(Class 1-4) B(Class 5-24)
Class Groupings are User Programmable
for Classes A and B

Speed Bins(Max. 16)
(User Programmable)

Time	0-30		31-35		36-40		41-44		45-48		49-52		53-55		56-59		60-63		.....	80-83		84-87		87+	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B		A	B	A	B	A	B
0 - 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
1 - 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
2 - 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-	-
3 - 4	-	-	-	-	.....																				
4 - 5																									
5 - 6																									
6 - 7																									
7 - 8																									
8 - 9																									
9 -10																									
10-11																									
11-12																									
12-13																									
13-14																									
14-15																									
15-16																									
16-17																									
17-18																									
18-19																									
.....																									
23-24																									

Maximum number of speed bins is 16 speed bins are user programmable.

FRONT AXLE WEIGHT TABLE

Number of Front Axles

Lane #
Hours, Day or Continuous*

Weight Categories (1000 kg)	Classification 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0- 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1- 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2- 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3- 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4- 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5- 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6- 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7- 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8- 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11-12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13-14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15 +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Maximum weight is user definable.
Categories are automatically defined by dividing the maximum weight by 16.

* The user specifies if this table is to be accumulated by the hour, day or continuous. This feature is user programmable.

TRIDEM AXLE WEIGHT TABLE

Number of Tridem Axles

Lane #
Hours, Day or Continuous*

Weight Categories (1000 kg)	Classification 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0- 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1- 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2- 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3- 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4- 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5- 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6- 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7- 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8- 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.																								
.																								
.																								
25-26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28-29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30-31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31 +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Maximum weight is user definable.
Categories are automatically determined by dividing the maximum weight by 32.

* The user specifies if this table is to be accumulated by the hour, day or continous. This feature is user programmable.

TANDEM AXLE WEIGHT TABLE

Number of Tandem Axles

Lane #
Hours, Day or Continuous*

Weight Categories (1000 kg)	Classification 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0- 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1- 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2- 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3- 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4- 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5- 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6- 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7- 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8- 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.																								
.																								
.																								
25-26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28-29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30-31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31 +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Maximum weight is user definable.
Categories are automatically determined by dividing by 32.

* The user specifies if this table is to be accumulated by the hour, day or continuous. This feature is user programmable.

QUAD AXLE WEIGHT TABLE

Number of Quad Axles

Lane #
Hours, Day or Continuous*

Weight Categories (1000 kg)	Classification 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0- 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1- 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2- 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3- 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4- 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5- 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6- 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7- 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8- 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.																								
.																								
.																								
25-26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28-29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30-31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31 +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Maximum weight is user definable.
Categories are automatically determined by dividing the maximum weight by 32.

* The user specifies if this table is to be accumulated by the hour, day or continous. This feature is user programmable.

SINGLE AXLE WEIGHT TABLE

Number of Single Axles

Lane #

Hours, Day or Continuous*

Weight Categories (1000 kg)	Classification 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0- 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1- 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2- 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3- 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4- 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5- 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6- 7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7- 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8- 9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.																								
.																								
.																								
25-26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26-27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27-28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28-29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29-30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30-31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31 +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Maximum weight is user definable.
Categories are automatically determined by dividing the maximum weight by 32.

* The user specifies if this table is to be accumulated by the hour, day or continuous. This feature is user programmable.

WEIGHT TABLE (GVW)

Number of Vehicles

Lane #
Hours, Day or Continuous*

Weight Categories (1000 kg)	Classification 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0- 2	-	-	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2- 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4- 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6- 8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12-14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14-16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16-18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.																								
.																								
.																								
50-52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52-54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54-56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56-58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
58-60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
60-62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
62 +	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Maximum weight is user definable.
Categories are automatically determined by dividing the maximum weight by 32.

* The user specifies is this table is to be accumulated by the hour, day or continuous. This feature is user programmable.

APPENDIX C

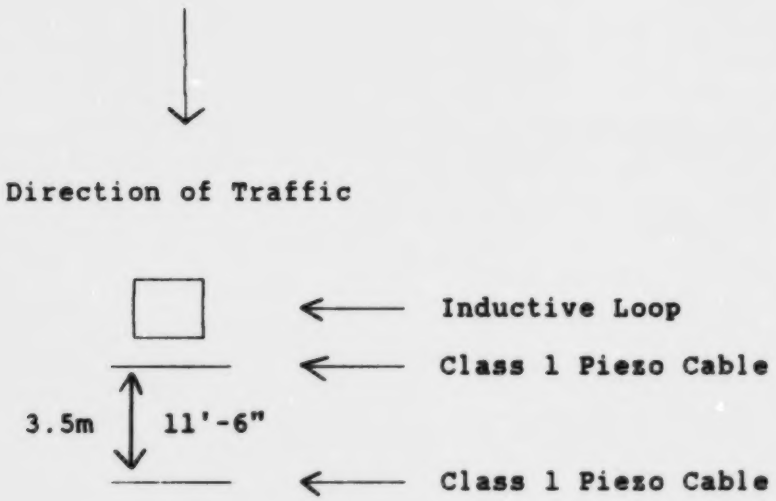
THE IRD 1060P SPECIFICATIONS

July 1988

SPECIFICATIONS FOR THE IRD 1060P-PIEZOELECTRIC AXLE LOAD CLASSIFIERS SYSTEM

1.0 CONFIGURATION

The system accepts input froms 8 Piezoelectric axle sensors and 8 Inductive loops. Each lane can be configured as follows:



Note: In multi-lane systems the piezo cables are located directly adjacent to the adjoining lanes to avoid double counting and partial weights.

2.0 READER PORTABLE COMPUTER

2.1 Displays vehicle passage in real time.

2.2 Capable of system setup, calibration and data retrieval.

3.0 IN-ROAD SENSOR

- Class 1 Piezoelectric Cables with IRD installation grout.
- Active length of cable is 3.5m or 11'-6".
- Maximum lead length must be less than 45m or 150'

Optional

1 - Thermocouple for ongoing roadway temperature records.
1 - Thermometer for ongoing air temperature records.

4.0 CLASSIFICATION

Classificaton adjustments include:

4.1 User defineable axle spacing limits for various classes.

4.2 User defineable definition of axle spacing for tandems, tridems and quads.

4.3 Optional user defineable front axle threshold weight for trucks of specific classes.

5.0 DATA

Individual vehicle data (vehicle records) are accumulated concurrently with tables.

The selection of tables is adjusted directly with site computer, or remotely via a telemetry package.

6.0 OVERWEIGHT VEHICLES

Overweight vehicles are identified. The system flags overweight vehicles utilizing a variable tolerance factor [(%) of allowable load] which is user defineable.

Maximum (legal) allowable axle load or GVW is user programmable for all classes and individual axles. When the maximum legal load is exceeded a flag is raised to identify the violation. The user can select the bridge formula as factory programmed or the user input maximum allowable weight for front, single, tandem, tridem axles or the GVW.

7.0 WEIGHT CALIBRATION

The system is self-adjustable based on the mean weight of the front axles on any specified classes of trucks (eg. 5 axle semis or class 9 and 10). The system accepts initial calibration parameters which are user defineable. The class or classes of vehicles used for automatic calibration is user programmable. The automatic adjustment can be remotely configured to specify the calibration to take place after 100 or 1,000 vehicle passes or after a specified number of days.

Engineering tables record statistics on front axles of 5 axle semi-trailers by lane and axle sensor (for 3 user programmable GVW weight groups).

Example: Lane 1 Axle Sensor 1 - Weight Group 1
June 1 10:01 to June 25 9:25

$\bar{x}$ (kg)(lbs)	s	n	Skew
4,095 (9028)	466(1027)	5,925	-.5

The engineering tables record changes in piezo sensor calibration by time, date, lane, sensor # and the factor of change.

Each sensor is independently calibrated to compensate for installation variations.

Vehicles that straddle lanes, and as a result are not completely over the sensor, are classified, but the weight is not recorded and the vehicle is only assigned to one lane.

8.0 COMMUNICATIONS

Password protection for data, site configuration, calibration and system parameters.

The system is capable of communicating with two or more collection computers at one site over a single phone line and modem.

The system has the option (which is user programmable) of continuous recording or stopping when the memory is full. During data transfer the system will either copy or remove data. The extracted data is placed in user defined directories and files in the host computer.

The system is capable of outputting vehicle records directly from the roadside computer to a terminal in real time via the RS 232 port on the system computer, and the system is capable of automatic polling.

All the site computer parameters can be accessed or changed remotely.

9.0 SYSTEM MONITORING

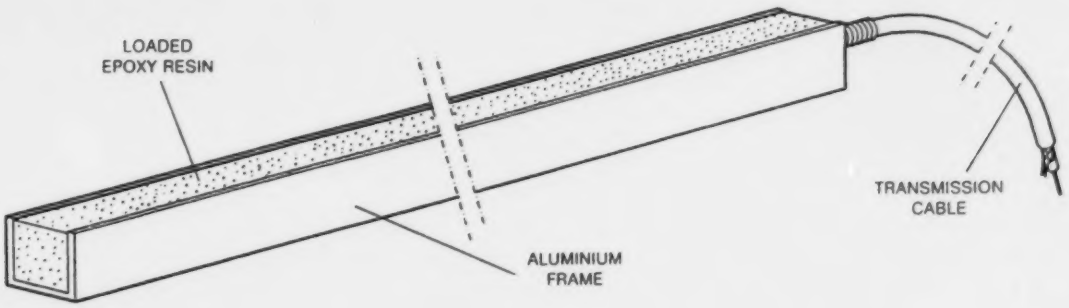
The system produces a variety of engineering tables, which can be accessed remotely from a central computer via telephone lines and communications software or direct on-site using the RPU. The engineering parameters are software password protected and include:

1) Weight of Front Axles on Calibration Vehicles
2) Calibration for Each Cable and Time of Adjustments
3) System Faults
4) Power Downs

APPENDIX D

SENSOR SPECIFICATIONS

EMBEDDED PIEZOELECTRIC SENSOR



PIEZOELECTRIC CABLE

Single core and sheath made of copper
Polarized piezoelectric insulation
Linear capacitance : ≃ 7500 pF/m

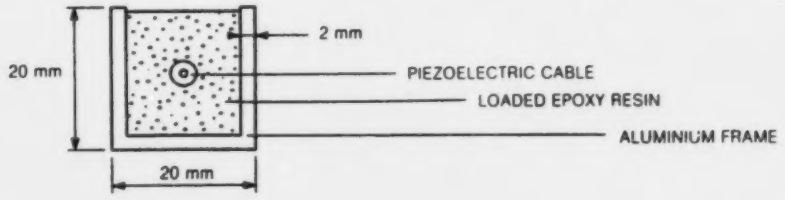
Insulation resistance : $\geqslant 10^{10}\ \Omega$.
Sensitivity dispersion : $\leqslant 7\ \%$
Piezoelectric factor : ≃ 1 V/bar

SCREENED TRANSMISSION CABLE :

50 Ω coaxial cable type RG 58 Cu
Capacitance : 110 ± 10 pF/m
Multiwire core and braid made of tinned copper

Polyethylene insulant
85 °C PVC sheath
Diameter : 5 mm

CROSS SECTION OF THE EMBEDDED PIEZOELECTRIC SENSOR



Standard length : 3.680 m of which 3.50 m is active zone

APPENDIX E

TESTING DATA

APPENDIX E.1
RAW DATA FROM INTEGRATION ALGORITHM TESTING
NOVEMBER, 1988
ONTARIO 7N LOW COST WEIGH IN MOTION SITE

INTERGRATION ALGORITHM
RANDOM VEHICLE TESTING
November, 1988
WEIGHT IN 1000'S OF
KILOGRAMS

VEHICLE	TYPE	NO. AXLE	SPEED	STATIC	WIM	P1	P3	P5	P13	P35
1.0	GVW	5.0	55.0	17.2	16.9	16.4	17.3	17.2	16.8	17.2
	FRONT			4.7	4.6	4.3	4.8	4.4	4.5	4.6
	T11			4.2	4.1	4.1	4.3	4.4	4.2	4.4
	T12			3.8	3.8	3.7	3.9	3.9	3.8	3.9
	T21			1.6	1.5	1.7	1.6	1.5	1.6	1.5
	T22			2.9	2.9	2.7	2.7	3.0	2.7	2.9
2.0	GVW	3.0	40.0	14.6	15.0	15.2	14.3	14.3	14.8	14.3
	FRONT			5.2	5.4	4.9	5.1	5.3	5.0	5.2
	T11			5.0	4.9	5.1	5.2	4.9	5.2	5.0
	T12			4.4	4.7	5.2	4.0	4.1	4.6	4.1
3.0	GVW	2.0	46.0	6.9	6.4	7.2	7.0	6.4	7.1	6.7
	FRONT			2.4	2.3	2.3	2.6	2.2	2.5	2.4
	REAR			4.5	4.1	4.9	4.4	4.2	4.6	4.3
4.0	GVW	3.0	40.0	10.6	10.5	10.0	10.7	10.8	10.3	10.7
	FRONT			4.8	4.7	4.6	5.0	4.9	4.8	4.9
	T11			3.0	3.1	2.9	3.0	3.3	2.9	3.1
	T22			2.8	2.7	2.6	2.7	2.7	2.7	2.7
5.0	GVW	2.0	48.0	9.4	9.4	9.3	9.9	9.2	9.6	9.5
	FRONT			5.0	5.1	5.1	5.2	4.9	5.1	5.0
	REAR			4.4	4.2	4.2	4.7	4.6	4.4	4.6
6.0	GVW	3.0	52.0	14.1	14.3	13.6	14.1	14.4	13.8	14.3
	FRONT			7.1	7.4	6.4	6.8	7.8	6.6	7.3
	T11			3.5	3.6	3.5	3.6	3.4	3.6	3.5
	T12			3.5	3.3	3.6	3.6	3.2	3.6	3.4
7.0	GVW	5.0	35.0	32.9	32.9	30.6	32.8	31.5	31.7	32.2
	FRONT			4.1	4.1	4.0	3.8	3.8	3.9	3.8
	T11			7.8	7.8	7.3	7.9	7.3	7.6	7.6
	T12			7.4	7.4	7.7	7.5	7.2	7.6	7.4
	T21			7.0	7.0	5.5	6.2	6.9	5.8	6.5

	T22			6.6	6.6	6.1	7.5	6.3	6.8	6.9
8.0	GVW	2.0	50.0	6.8	6.8	8.0	7.5	6.6	7.7	7.1
	FRONT			2.7	2.6	2.8	2.7	3.0	2.7	2.9
	REAR			4.1	4.2	5.2	4.8	3.6	5.0	4.2
9.0	GVW	5.0	49.0	17.5	17.1	20.4	19.2	18.4	19.8	18.8
	FRONT			4.0	4.1	4.0	4.1	4.5	4.0	4.3
	T11			4.3	3.8	4.9	4.1	4.6	4.5	4.3
	T12			4.2	4.3	4.2	4.2	4.0	4.2	4.1
	T21			2.8	2.7	3.4	3.4	2.9	3.4	3.2
	T22			2.2	2.2	4.0	3.4	2.5	3.7	2.9
10.0	GVW	3.0	44.0	26.9	28.2	24.8	26.7	25.6	25.7	26.1
	FRONT			8.4	8.7	6.7	7.5	8.0	7.1	7.8
	T11			9.3	10.4	8.9	9.6	8.6	9.2	9.1
	T12			9.2	9.1	9.2	9.6	9.0	9.4	9.3
11.0	GVW	2.0	50.0	7.4	8.5	8.3	7.9	7.0	8.1	7.4
	FRONT			3.2	3.1	2.8	2.4	3.0	2.6	2.7
	REAR			4.2	5.4	5.5	5.5	4.0	5.5	4.7
12.0	GVW	3.0	30.0	14.3	14.7	11.9	12.7	12.6	12.3	12.6
	FRONT			4.5	4.5	3.1	3.4	4.0	3.2	3.7
	T12			4.9	5.2	4.3	4.1	4.0	4.2	4.1
	T12			4.9	5.0	4.6	5.1	4.6	4.9	4.9
13.0	GVW	4.0	40.0	28.4	29.2	24.2	22.2	24.7	23.2	23.5
	FRONT			3.8	3.2	4.0	2.7	2.9	3.4	2.8
	REAR			11.7	12.5	8.6	8.2	11.0	8.4	9.6
	T21			6.8	6.5	6.1	5.5	4.8	5.8	5.2
	T22			6.1	7.0	5.5	5.8	6.0	5.7	5.9
14.0	GVW	2.0	28.0	9.8	9.9	10.4	8.2	9.2	9.3	8.7
	FRONT			4.3	4.5	3.4	2.4	4.0	2.9	3.2
	REAR			5.5	5.4	7.0	5.8	5.2	6.4	5.5
15.0	GVW	3.0	38.0	27.8	27.6	21.4	23.3	27.5	22.3	25.4
	FRONT			6.4	6.2	6.7	6.8	6.2	6.8	6.5
	T11			9.8	11.1	6.4	6.8	9.3	6.6	8.1
	T12			11.6	10.3	8.3	9.6	11.9	8.9	10.7
16.0	GVW	4.0	58.0	13.4	13.4	13.1	12.8	12.3	12.9	12.5
	FRONT			3.7	3.9	3.7	2.7	3.0	3.2	2.9
	rear			5.1	5.2	5.0	5.3	4.8	5.2	5.1
	T21			2.5	2.1	2.4	2.7	2.7	2.6	2.7
	T22			2.1	2.2	2.0	2.0	1.8	2.0	1.9
17.0	GVW	2.0	53.0	9.7	10.1	9.6	9.5	10.3	9.5	9.9
	FRONT			3.9	3.8	3.8	3.8	4.1	3.8	3.9
	REAR			5.8	6.3	5.8	5.7	6.2	5.7	5.9

18.0	GVW	2.0	31.0	6.1	6.1	6.1	5.9	5.9	6.0	5.9
	FRONT			2.6	2.7	2.8	2.4	2.9	2.6	2.7
	REAR			3.5	3.4	3.4	2.7	2.9	3.1	2.8
19.0	GVW	3.0	36.0	31.3	32.7	30.8	30.6	29.7	30.7	30.1
	FRONT			8.1	8.2	8.0	7.6	7.4	7.8	7.5
	T11			11.7	12.8	11.6	11.0	11.0	11.3	11.0
	T12			11.5	11.7	11.2	12.0	11.3	11.6	11.7
20.0	GVW	2.0	48.0	6.3	5.9	6.7	6.5	5.9	6.6	6.2
	FRONT			2.5	2.7	2.4	2.4	2.0	2.4	2.2
	REAR			3.8	3.2	4.3	4.1	4.4	4.2	4.3
21.0	GVW	5.0	41.0	28.2	26.6	28.4	28.3	28.3	28.3	28.3
	FRONT			3.3	3.3	3.1	3.4	3.0	3.2	3.2
	T11			9.8	9.9	9.8	9.6	10.7	9.7	10.1
	T12			5.7	4.5	5.5	6.2	5.2	5.8	5.7
	T21			5.2	4.2	5.2	4.8	4.9	5.0	4.8
	T22			4.2	4.7	4.9	4.3	4.5	4.6	4.4
22.0	GVW	2.0	62.0	6.9	6.8	6.7	6.7	6.4	6.7	6.5
	FRONT			3.3	3.0	3.0	3.0	2.9	3.0	3.0
	REAR			3.6	3.2	3.7	3.4	4.0	3.5	3.7
23.0	GVW	2.0	58.0	6.5	6.5	6.2	6.4	6.2	6.3	6.3
	FRONT			2.0	1.9	1.8	1.7	2.5	1.8	2.1
	REAR			4.5	4.6	4.3	4.7	4.2	4.5	4.5
24.0	GVW	2.0	35.0	13.1	12.8	13.0	12.9	13.6	13.0	13.2
	FRONT			2.8	2.6	2.6	2.8	3.0	2.7	2.9
	REAR			10.3	10.2	10.5	10.1	10.6	10.3	10.4
25.0	GVW	5.0	43.0	27.7	27.4	27.2	27.1	28.9	27.1	28.0
	FRONT			4.2	4.3	4.0	4.3	4.5	4.2	4.4
	T11			6.8	6.7	6.7	6.6	7.4	6.6	7.0
	T12			5.3	5.2	5.4	5.1	5.0	5.2	5.0
	T21			5.9	5.9	5.2	5.9	6.4	5.5	6.1
	T22			5.5	5.3	5.8	5.2	5.6	5.5	5.4
26.0	GVW	5.0	32.0	30.4	30.5	30.1	29.6	28.1	29.8	28.8
	FRONT			4.5	4.6	4.4	4.6	5.6	4.5	5.1
	T11			7.9	8.0	7.9	7.7	6.9	7.8	7.3
	T12			7.4	7.3	7.1	7.3	6.7	7.2	7.0
	T21			5.4	5.6	5.5	4.8	4.5	5.1	4.6
	T22			5.2	5.0	5.1	5.1	4.4	5.1	4.8
27.0	GVW	4.0	30.0	14.7	14.3	15.4	14.2	15.6	14.8	14.9
	FRONT			4.2	4.1	4.1	4.1	3.9	4.3	4.0
	REAR			3.5	3.5	3.7	3.4	3.0	3.5	3.2
	T21			4.0	3.8	4.3	3.9	4.5	4.1	4.2
	T22			3.0	2.9	3.4	2.7	3.7	3.1	3.2
28.0	GVW	2.0	47.0	6.9	6.8	6.7	7.1	6.0	6.9	6.6
	FRONT			2.7	2.7	2.8	2.6	3.0	2.7	2.8
	REAR			4.2	4.1	3.9	4.3	4.8	4.1	4.6

APPENDIX E.2
RAW DATA FROM RANDOM VEHICLE TESTING
NOVEMBER, 1988
ONTARIO 7N SITE
LOW COST WEIGH IN MOTION

Algorithm Testing Integration Algorithm
Weight in 1000's of kgs

Trials 1-12 Lift Axle Up (5 Axle Truck)
Trials 13-33 Lift Axle Down (6 Axle Truck)

Testing performed during a 6 hour period
Only three cable in use, as Cable 4 had failed (sheared connector)
Speeds from 37 to 78 km/hr

TRIAL	SPEED	AXLE	STATIC WEIGHT	FLAT WIM	P1 WIM	P3 WIM	P5 WIM	P15 WIM	P35 WIM	P135 WIM
1	37	FRONT	5.9	5.7	5.1	5.2	5.6	5.4	5.4	5.3
	37	T11	10.6	11.1	9.2	8.9	9.5	9.3	9.2	9.2
	37	T12	10.5	11.0	9.7	9.4	9.5	9.6	9.5	9.5
	37	T21	10.2	11.0	8.8	8.4	8.2	8.5	8.3	8.5
	37	T22	10.5	9.8	8.8	11.0	9.0	8.9	10.0	9.6
2	61	FRONT	5.9	5.8	5.9	7.1	5.5	5.7	6.3	6.2
	61	T11	10.6	10.4	11.0	11.7	8.5	9.7	10.1	10.4
	61	T12	10.5	10.2	12.0	10.6	8.4	10.2	9.5	10.3
	61	T21	10.2	8.7	10.6	11.5	8.6	9.6	10.0	10.2
	61	T22	10.5	11.6	12.1	11.7	9.1	10.6	10.4	11.0
3	37	FRONT	5.9	6.0	5.9	6.3	5.2	5.6	5.8	5.8
	37	T11	10.6	11.0	9.9	9.5	10.2	10.1	9.9	9.9
	37	T12	10.5	11.0	9.8	10.3	10.9	10.4	10.6	10.3
	37	T21	10.2	11.0	8.8	9.3	8.9	8.9	9.1	9.0
	37	T22	10.5	9.5	9.1	11.8	10.5	9.8	11.1	10.5
4	62	FRONT	5.9	5.9	5.5	5.7	6.9	6.2	6.3	6.0
	62	T11	10.6	10.7	10.5	10.1	10.4	10.4	10.2	10.3
	62	T12	10.5	10.2	11.8	10.3	10.5	11.2	10.4	10.9
	62	T21	10.2	8.7	9.8	10.1	9.5	9.7	9.8	9.8
	62	T22	10.5	11.0	11.3	10.5	10.2	10.8	10.4	10.7
5	61	FRONT	5.9	5.5	6.0	5.9	5.4	5.7	5.6	5.8
	61	T11	10.6	10.5	9.9	9.9	10.9	10.4	10.4	10.2
	61	T12	10.5	10.4	11.1	9.1	11.0	11.1	10.0	10.4
	61	T21	10.2	8.4	9.3	8.8	10.3	9.8	9.5	9.5
	61	T22	10.5	10.9	10.8	8.9	11.0	10.9	10.0	10.2
6	60	FRONT	5.9	5.7	5.1	5.8	6.6	5.9	6.2	5.8
	60	T11	10.6	10.3	10.8	10.0	9.9	10.3	9.9	10.2
	60	T12	10.5	9.9	11.5	9.7	10.3	10.9	10.0	10.5
	60	T21	10.2	8.6	9.1	10.7	9.8	9.5	10.3	9.9
	60	T22	10.5	11.1	10.5	11.9	10.3	10.4	11.1	10.9
7	37	FRONT	5.9	5.7	5.2	5.4	6.4	5.8	5.9	5.7

	37	T12	10.5	11.0	10.7	9.4	10.4	10.5	9.9	10.1	
	37	T21	10.2	10.8	8.7	8.8	10.1	9.4	9.4	9.2	
	37	T22	10.5	10.1	11.0	10.7	9.9	10.5	10.3	10.5	
8	61	FRONT	5.9	5.6	6.1	6.8	6.0	6.0	6.4	6.3	
	61	T11	10.6	10.4	11.1	11.1	8.8	10.0	10.0	10.4	
	61	T12	10.5	10.2	12.0	11.0	9.2	10.6	10.1	10.7	
	61	T21	10.2	8.7	11.7	9.9	9.6	10.6	9.7	10.4	
	61	T22	10.5	10.5	12.4	10.8	11.6	12.0	11.2	11.6	
9	37	FRONT	5.9	5.7	5.4	5.5	6.4	5.9	5.9	5.7	
	37	T11	10.6	11.0	10.3	9.5	9.9	10.1	9.7	9.9	
	37	T12	10.5	11.0	11.2	10.2	9.9	10.5	10.0	10.4	
	37	T21	10.2	10.9	9.2	9.7	10.0	9.6	9.8	9.6	
	37	T22	10.5	10.3	11.6	11.4	9.7	10.7	10.6	10.9	
10	61	FRONT	5.9	5.7	5.1	5.6	7.2	6.1	6.4	6.0	
	61	T11	10.6	10.6	11.7	10.6	11.4	11.6	11.0	11.2	
	61	T12	10.5	10.0	12.8	10.7	11.2	12.0	10.9	11.6	
	61	T21	10.2	9.0	10.5	9.9	9.4	9.9	9.6	9.9	
	61	T22	10.5	10.3	12.2	11.2	12.3	12.2	11.7	11.9	
11	77	FRONT	5.9	4.9	5.3	6.2	6.8	6.0	6.5	6.1	
	77	T11	10.6	10.3	11.6	11.8	11.6	11.6	11.7	11.6	
	77	T12	10.5	10.3	14.4	13.0	10.8	12.6	11.9	12.7	
	77	T21	10.2	10.8	12.3	12.7	6.8	9.5	9.7	10.6	
	77	T22	10.5	10.0	16.5	11.2	9.8	13.2	10.5	12.5	
12	38	FRONT	5.9	5.8	5.6	5.5	6.4	6.0	5.9	5.8	
	38	T11	10.6	11.0	10.1	9.4	10.3	10.2	9.9	9.9	
	38	T12	10.5	11.2	10.8	10.4	10.4	10.6	10.4	10.6	
	38	T21	10.2	10.8	9.3	9.4	10.5	9.9	10.0	9.7	
	38	T22	10.5	10.4	11.0	11.3	10.1	10.5	10.7	10.8	
13	38	FRONT	5.6	5.6	4.9	6.4	6.4	5.7	6.4	5.9	
	38	T11	9.3	9.6	8.9	8.8	9.6	9.3	9.2	9.1	
	38	T12	9.1	9.7	9.2	8.6	10.0	9.6	9.3	9.3	
	38	AIR	7.9	8.3	6.7	8.5	7.9	7.3	8.2	7.7	
	38	T21	7.5	8.0	6.8	8.1	8.0	7.4	8.1	7.7	
	38	T22	7.8	7.5	8.5	8.3	7.4	8.0	7.8	8.1	
14	37	FRONT	5.6	5.5	5.2	5.7	5.4	5.3	5.6	5.4	
	37	T11	9.3	9.4	7.9	8.7	8.7	8.3	8.7	8.4	
	37	T12	9.1	9.5	8.5	8.4	8.6	8.6	8.5	8.5	
	37	AIR	7.9	8.4	6.5	7.6	7.7	7.1	7.6	7.3	
	37	T21	7.5	7.8	6.6	7.3	6.9	6.7	7.1	6.9	
	37	T22	7.8	7.4	8.2	7.3	6.5	7.4	6.9	7.3	
15	37	FRONT	5.6	5.3	4.6	4.9	5.6	5.1	5.2	5.0	
	37	T11	9.3	9.4	8.3	8.2	9.1	8.7	8.7	8.6	
	37	T12	9.1	9.6	8.6	8.1	8.9	8.8	8.5	8.6	
	37	AIR	7.9	8.5	6.6	7.3	7.1	6.9	7.2	7.0	
	37	T21	7.5	8.0	6.6	7.1	7.2	7.0	7.3	7.1	

	37	T22	7.8	7.3	8.3	7.3	7.1	7.7	7.2	7.6
16	37	FRONT	5.6	5.2	4.5	5.0	5.8	5.2	5.4	5.1
	37	T11	9.3	9.4	8.3	7.8	9.8	9.0	8.8	8.6
	37	T12	9.1	9.6	8.7	7.8	9.3	9.0	8.6	8.6
	37	AIR	7.9	8.4	6.7	7.7	7.5	7.1	7.6	7.3
	37	T21	7.5	7.7	6.8	7.4	7.7	7.2	7.6	7.3
	37	T22	7.8	7.3	8.3	7.6	7.4	7.9	7.5	7.8
17	38	FRONT	5.6	5.6	4.9	5.2	6.1	5.5	5.6	5.4
	38	T11	9.3	9.7	8.2	8.0	8.3	8.3	8.2	8.2
	38	T12	9.1	9.8	8.6	8.7	8.5	8.5	8.6	8.6
	38	AIR	7.9	8.6	6.7	7.7	7.4	7.0	7.6	7.3
	38	T21	7.5	7.9	6.8	7.6	7.4	7.1	7.5	7.3
	38	T22	7.8	7.5	8.4	7.6	7.0	7.7	7.3	7.6
18	61	FRONT	5.6	5.3	5.0	5.5	5.9	5.5	5.7	5.5
	61	T11	9.3	9.0	9.3	9.3	8.4	8.8	8.9	9.0
	61	T12	9.1	8.8	9.9	8.9	8.9	9.4	8.9	9.2
	61	AIR	7.9	7.9	6.3	8.5	7.1	6.7	7.8	7.3
	61	T21	7.5	7.4	7.3	9.0	7.2	7.2	8.1	7.8
	61	T22	7.8	7.9	8.3	8.6	8.1	8.2	8.4	8.3
19	48	FRONT	5.6	5.9	4.3	5.4	5.9	5.1	5.7	5.2
	48	T11	9.3	9.4	8.7	8.3	9.7	9.2	9.0	8.9
	48	T12	9.1	9.5	9.2	8.3	10.0	9.6	9.1	9.2
	48	AIR	7.9	8.3	6.6	7.8	7.2	6.9	7.5	7.2
	48	T21	7.5	9.4	8.0	7.1	7.9	7.9	7.5	7.6
	48	T22	7.8	7.7	6.7	8.0	8.9	7.8	8.4	7.9
20	78	FRONT	5.6	4.6	4.9	4.8	6.1	5.5	5.4	5.3
	78	T11	9.3	9.0	9.4	9.8	10.1	9.8	10.0	9.8
	78	T12	9.1	8.8	10.4	9.2	9.7	10.0	9.4	9.7
	78	AIR	7.9	7.3	6.7	7.7	8.4	7.6	8.1	7.6
	78	T21	7.5	7.6	9.8	10.6	4.9	7.3	7.7	8.4
	78	T22	7.8	4.6	11.5	7.9	8.2	9.9	8.0	9.2
21	37	FRONT	5.6	5.6	5.8	5.8	4.9	5.3	5.4	5.5
	37	T11	9.3	9.6	8.2	8.1	9.9	9.0	9.0	8.7
	37	T12	9.1	9.9	8.9	8.4	9.9	9.4	9.1	9.0
	37	AIR	7.9	7.5	6.3	5.2	7.4	6.8	6.3	6.3
	37	T21	7.5	8.0	7.2	6.5	8.3	7.8	7.4	7.4
	37	T22	7.8	7.7	8.4	6.9	7.6	8.0	7.3	7.6
22	62	FRONT	5.6	5.7	5.8	5.7	6.0	5.9	5.8	5.8
	62	T11	9.3	9.2	9.0	8.8	9.5	9.3	9.2	9.1
	62	T12	9.1	9.0	9.8	9.1	10.0	9.9	9.5	9.6
	62	AIR	7.9	9.0	6.7	7.8	8.9	7.8	8.3	7.8
	62	T21	7.5	7.4	7.5	7.9	7.7	7.6	7.8	7.7
	62	T22	7.8	7.8	9.5	6.7	8.8	9.2	7.8	8.3
23	60	FRONT	5.6	5.3	4.8	5.3	6.9	5.8	6.1	5.7
	60	T11	9.3	8.7	9.2	9.0	9.5	9.3	9.2	9.2

	60	AIR	7.9	8.5	6.8	7.1	7.4	7.1	7.2	7.1
	60	T21	7.5	7.1	7.4	8.2	7.2	7.3	7.7	7.6
	60	T22	7.8	7.4	9.1	7.2	8.1	8.6	7.7	8.1
24	61	FRONT	5.6	5.6	4.9	5.2	7.0	6.0	6.1	5.7
	61	T11	9.3	9.0	9.7	8.9	9.7	9.7	9.3	9.4
	61	T12	9.1	8.5	10.4	8.1	10.3	10.4	9.2	9.6
	61	AIR	7.9	8.4	7.0	7.7	8.1	7.5	7.9	7.6
	61	T21	7.5	7.5	7.5	8.2	7.5	7.5	7.8	7.7
	61	T22	7.8	7.4	9.6	7.6	8.3	8.9	7.9	8.5
25	61	FRONT	5.6	5.6	5.6	6.1	6.2	5.9	6.1	5.9
	61	T11	9.3	9.0	9.4	9.2	8.2	8.8	8.7	8.9
	61	T12	9.1	8.7	10.4	9.4	8.5	9.4	8.9	9.4
	61	AIR	7.9	8.2	6.7	9.0	7.2	7.0	8.1	7.6
	61	T21	7.5	7.4	7.6	8.9	7.0	7.3	7.9	7.8
	61	T22	7.8	7.7	9.4	8.7	8.1	8.7	8.4	8.7
26	37	FRONT	5.6	5.3	5.1	5.5	6.1	5.6	5.8	5.5
	37	T11	9.3	9.5	8.8	8.2	10.1	9.5	9.2	9.1
	37	T12	9.1	9.6	9.3	8.2	9.9	9.6	9.1	9.1
	37	AIR	7.9	7.6	6.4	7.2	6.9	6.7	7.1	6.8
	37	T21	7.5	8.8	5.9	8.0	7.2	6.5	7.6	7.0
	37	T22	7.8	7.6	8.3	8.4	8.6	8.4	8.5	8.4
27	61	FRONT	5.6	5.4	5.2	5.2	6.5	5.8	5.8	5.6
	61	T11	9.3	9.1	9.7	9.2	9.9	9.8	9.5	9.6
	61	T12	9.1	8.9	10.7	8.7	9.6	10.1	9.2	9.7
	61	AIR	7.9	8.3	6.9	8.7	7.4	7.1	8.0	7.7
	61	T21	7.5	7.4	7.2	8.9	8.7	8.0	8.8	8.3
	61	T22	7.8	8.9	8.0	8.8	7.5	7.7	8.2	8.1
28	37	FRONT	5.6	5.6	5.3	5.5	6.0	5.6	5.8	5.6
	37	T11	9.3	9.5	8.8	8.8	8.7	8.7	8.8	8.8
	37	T12	9.1	9.8	9.2	9.5	9.1	9.2	9.3	9.3
	37	AIR	7.9	7.9	6.9	7.3	6.8	6.9	7.1	7.0
	37	T21	7.5	8.7	6.2	8.3	7.1	6.6	7.7	7.2
	37	T22	7.8	7.8	9.1	8.5	8.0	8.5	8.2	8.5
29	61	FRONT	5.6	5.3	5.5	6.3	6.3	5.9	6.3	6.0
	61	T11	9.3	9.0	9.9	9.9	8.4	9.2	9.2	9.4
	61	T12	9.1	8.6	11.0	9.7	9.1	10.0	9.4	9.9
	61	AIR	7.9	8.0	6.9	8.6	8.2	7.6	8.4	7.9
	61	T21	7.5	6.8	7.2	9.7	7.8	7.5	8.7	8.2
	61	T22	7.8	9.0	8.3	10.3	7.1	7.7	8.7	8.6
30	78	FRONT	5.6	4.7	5.2	5.4	6.9	6.1	6.1	5.8
	78	T11	9.3	9.0	9.6	10.0	9.6	9.6	9.8	9.7
	78	T12	9.1	8.8	11.1	10.2	10.1	10.6	10.2	10.5
	78	AIR	7.9	8.0	6.8	7.6	8.0	7.4	7.8	7.5
	78	T21	7.5	9.5	5.9	7.8	8.1	7.0	7.9	7.2
	78	T22	7.8	8.6	11.5	10.2	9.7	9.1	8.[illegible]	[illegible]

31	37	FRONT	5.6	5.5	4.7	5.3	6.5	5.6	5.9	5.5
	37	T11	9.3	9.5	8.6	8.5	9.9	9.3	9.2	9.0
	37	T12	9.1	9.7	9.4	8.0	10.0	9.7	9.0	9.1
	37	AIR	7.9	8.1	6.6	7.8	7.6	7.1	7.7	7.3
	37	T21	7.5	8.5	5.7	8.0	7.2	6.5	7.6	7.0
	37	T22	7.8	7.5	8.4	8.2	8.5	8.4	8.4	8.4
32	37	FRONT	5.6	5.4	4.5	6.1	6.4	5.5	6.2	5.7
	37	T11	9.3	9.5	8.9	8.7	10.2	9.5	9.4	9.2
	37	T12	9.1	9.5	9.2	8.0	9.5	9.4	8.7	8.9
	37	AIR	7.9	7.8	6.2	7.4	7.6	6.9	7.5	7.1
	37	T21	7.5	8.0	6.9	8.3	8.0	7.4	8.2	7.7
	37	T22	7.8	7.3	8.5	8.5	7.7	8.1	8.1	8.3
33	60	FRONT	5.6	5.4	5.4	6.3	5.8	5.6	6.1	5.9
	60	T11	9.3	8.8	9.0	9.5	7.5	8.3	8.5	8.7
	60	T12	9.1	8.5	9.8	8.9	8.1	8.9	8.5	8.9
	60	AIR	7.9	8.0	7.8	8.2	8.3	8.0	8.2	8.1
	60	T21	7.5	7.0	8.3	7.8	6.4	7.3	7.1	7.5
	60	T22	7.8	7.8	9.6	8.1	8.1	8.9	8.1	8.6

APPENDIX E.3
DATA TABLES FROM ONTARIO HIGHWAY 7N
LOW COST WEIGH IN MOTION SYSTEM
CLASSIFICATION, SPEED, WEIGHT DATA
TABLES FOR A 2 DAY PERIOD, MAY, 1989

International Road Dynamics
Low Cost
Weigh In Motion System

Classification Table

Start Time: Tue May 16 16:18:59 1989

Lane: 1

Time	Classification											
	1	2	3	4	5	6	7	8	9	10	11	12
0 - 1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	250	4	1	0	0	0	0	0	0	0	0	0
17-18	906	8	0	0	1	2	1	0	0	0	0	0
18-19	612	7	0	0	0	1	0	0	0	0	0	0
19-20	390	7	1	0	0	0	0	0	0	0	0	0
20-21	247	6	0	0	0	0	1	0	0	0	0	0
21-22	278	5	0	0	0	1	0	0	0	0	0	0
22-23	249	3	0	0	0	0	0	0	0	0	0	0
23-24	138	1	0	0	0	0	0	0	0	0	0	0

Time	Classification											
	13	14	15	16	17	18	19	20	21	22	23	24
0 - 1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0	0	0	0	0
17-18	0	0	1	0	0	0	0	0	0	0	0	0
18-19	0	0	5	0	0	0	0	0	0	0	0	0
19-20	0	0	1	0	0	0	0	0	0	0	0	0
20-21	0	0	1	0	0	0	0	0	0	0	0	0
21-22	0	0	2	0	0	0	0	0	0	0	0	0
22-23	0	0	8	0	0	0	0	0	0	0	0	0
23-24	0	0	5	0	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Classification Table

Start Time: Tue May 16 16:18:59 1989

Lane: 2 Page 1 of 2

Time	Classification											
	1	2	3	4	5	6	7	8	9	10	11	12
0 - 1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	188	1	0	0	0	0	0	0	0	0	0	0
17-18	753	0	3	0	0	0	0	0	0	0	0	0
18-19	526	1	1	0	0	0	0	0	0	0	0	0
19-20	375	0	0	0	0	0	0	0	0	0	0	0
20-21	255	1	2	0	0	0	0	0	0	0	0	0
21-22	269	1	0	3	0	0	1	1	1	0	0	0
22-23	236	0	0	0	0	0	0	0	0	0	0	0
23-24	154	0	0	0	0	0	0	0	0	0	0	0

Time	Classification											
	13	14	15	16	17	18	19	20	21	22	23	24
0 - 1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0	0	0	0	0
17-18	0	0	1	0	0	0	0	0	0	0	0	0
18-19	0	0	2	0	0	0	0	0	0	0	0	0
19-20	0	0	1	0	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0	0	0	0	0
21-22	0	0	1	0	0	0	0	0	0	0	0	0
22-23	0	0	1	0	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Classification Table

Start Time: Tue May 16 16:18:59 1989

Lane: 3

Time	Classification											
	1	2	3	4	5	6	7	8	9	10	11	12
0 - 1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	247	16	4	3	1	1	4	0	0	0	0	0
17-18	389	23	6	0	2	3	4	0	0	1	0	0
18-19	227	35	4	1	1	3	6	0	1	0	0	3
19-20	134	16	2	0	1	2	3	0	1	0	0	1
20-21	85	17	1	1	0	0	5	0	0	1	0	0
21-22	75	12	0	0	0	0	4	1	0	0	0	0
22-23	85	4	3	0	0	0	9	0	0	0	0	1
23-24	30	2	0	0	0	0	4	0	0	0	0	0

Time	Classification											
	13	14	15	16	17	18	19	20	21	22	23	24
0 - 1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	0	0	3	0	0	0	0	0	0	0	0	0
17-18	0	0	4	0	0	0	0	0	0	0	0	0
18-19	1	0	2	0	0	0	0	0	0	0	0	0
19-20	0	0	1	0	0	0	0	0	0	0	0	0
20-21	0	0	2	0	0	0	0	0	0	0	0	0
21-22	0	0	1	0	0	0	0	0	0	0	0	0
22-23	0	0	1	0	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Speed Distribution Table

Start Time: Tue May 16 16:18:59 1989

Lane: 1 Page 1 of 3
Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins											
	0 - 10		11 - 20		21 - 30		31 - 40		41 - 50		51 - 60	
	A	B	A	B	A	B	A	B	A	B	A	B
0 - 1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	2	0	2	0	0	0	0	0	0	0	27	0
17-18	15	0	6	0	0	0	0	0	3	1	88	2
18-19	13	0	10	1	0	1	0	1	0	0	18	2
19-20	5	0	2	0	0	1	0	0	0	0	34	0
20-21	0	0	0	0	0	0	0	0	0	0	6	0
21-22	4	0	0	0	0	1	0	0	0	0	12	1
22-23	0	0	0	0	0	0	0	1	0	0	8	2
23-24	0	0	0	0	0	0	0	0	0	0	18	0

Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins											
	61 - 70		71 - 80		81 - 90		91 - 100		101 - 110		111 - 120	
	A	B	A	B	A	B	A	B	A	B	A	B
0 - 1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	103	0	82	0	31	0	8	0	0	0	0	0
17-18	392	0	270	1	116	0	21	1	3	0	0	0
18-19	223	0	190	0	104	0	51	0	6	0	4	1
19-20	119	0	129	0	75	0	30	0	3	0	1	0
20-21	75	1	86	0	57	1	24	0	4	0	1	0
21-22	90	0	97	0	61	1	16	0	3	0	0	0
22-23	94	1	95	1	36	1	17	2	1	0	1	0
23-24	36	1	44	3	28	0	13	1	0	0	0	0

Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins															
	121 - 130		131 - 140		141 - 150		151 +									
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
0 - 1	0	0	0	0	0	0	0	0								
1 - 2	0	0	0	0	0	0	0	0								
2 - 3	0	0	0	0	0	0	0	0								
3 - 4	0	0	0	0	0	0	0	0								
4 - 5	0	0	0	0	0	0	0	0								
5 - 6	0	0	0	0	0	0	0	0								
6 - 7	0	0	0	0	0	0	0	0								
7 - 8	0	0	0	0	0	0	0	0								
8 - 9	0	0	0	0	0	0	0	0								
9 -10	0	0	0	0	0	0	0	0								
10-11	0	0	0	0	0	0	0	0								
11-12	0	0	0	0	0	0	0	0								
12-13	0	0	0	0	0	0	0	0								
13-14	0	0	0	0	0	0	0	0								
14-15	0	0	0	0	0	0	0	0								
15-16	0	0	0	0	0	0	0	0								
16-17	0	0	0	0	0	0	0	0								
17-18	0	0	0	0	0	0	0	0								
18-19	0	0	0	0	0	0	0	0								
19-20	0	0	0	0	0	0	0	0								
20-21	0	0	0	0	0	0	0	0								
21-22	0	0	0	0	0	0	0	0								
22-23	0	0	0	0	0	0	0	0								
23-24	0	0	0	0	0	0	0	0								

International Road Dynamics
Low Cost
Weigh In Motion System

Speed Distribution Table

Start Time: Tue May 16 16:18:59 1989

Lane: 2 Page 1 of 3
Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins 0 - 10		11 - 20		21 - 30		31 - 40		41 - 50		51 - 60	
	A	B	A	B	A	B	A	B	A	B	A	B
0 - 1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	[illegible]	0	0	0	0	0
6 - 7	0	0	0	0	0	0		0	0	0	[illegible]	0
7 - 8	0	0	0	0	0	0		0	0	0		0
8 - 9	0	0	0	0	0	0		0	0	0		0
9 -10	0	0	0	0	0	0		0	0	0		0
10-11	0	0	0	0	0	0	[illegible]	0	0	0	0	0
11-12	0	0	0	0	0	0		0	0	0	0	[illegible]
12-13	0	0	0	0	0	0		0	0	0	0	0
13-14	0	0	0	0	0	0		0	0	0	0	0
14-15	0	0	0	0	0	0		0	0	0	0	0
15-16	0	0	0	0	0	0		0	0	0	0	0
16-17	10	0	3	0	1	0	[illegible]	0	2	0	11	0
17-18	3	0	0	[illegible]	0	0	1	0	9	0	80	0
18-19	20	0	5	0	0	2	0	0	10	0	22	0
19-20	1	0	0	0	0	0	1	0	4	0	7	0
20-21	0	0	0	0	0	0	1	0	3	0	15	0
21-22	1	0	0	0	0	0	0	0	0	1	15	1
22-23	1	0	1	0	0	0	1	0	1	0	12	0
23-24	0	0	0	0	0	0	0	0	2	0	12	0

Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins 61 - 70		71 - 80		81 - 90		91 - 100		101 - 110		111 - 120	
	A	B	A	B	A	B	A	B	A	B	A	B
0 - 1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	84	0	62	0	24	0	10	0	1	0	1	0
17-18	225	0	242	0	125	0	56	1	9	0	4	0
18-19	111	0	174	0	111	0	58	0	13	0	3	0
19-20	89	1	114	0	90	0	50	0	13	0	1	0
20-21	58	0	78	0	67	0	28	0	7	0	1	0
21-22	62	0	99	2	60	0	32	0	3	0	0	0
22-23	64	0	84	1	46	0	21	0	3	0	0	0
23-24	39	0	48	0	30	0	19	0	1	0	2	0

Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins							
	121 - 130		131 - 140		141 - 150		151 +	
	A	B	A	B	A	B	A	B
0 - 1	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0
17-18	2	0	0	0	0	0	0	0
18-19	1	0	0	0	0	0	0	0
19-20	3	0	2	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0
21-22	0	0	1	0	0	0	0	0
22-23	2	0	0	0	0	0	0	0
23-24	0	0	0	0	1	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Speed Distribution Table

Start Time: Tue May 16 16:18:59 1989

Lane: 3 Page 1 of 3
Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins 0 - 10		11 - 20		21 - 30		31 - 40		41 - 50		51 - 60	
	A	B	A	B	A	B	A	B	A	B	A	B
0 - 1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	1	0	3	0	3	0	0	0	0	3	6	2
17-18	4	0	5	0	1	1	0	0	2	4	10	1
18-19	2	0	2	0	1	0	0	0	1	1	6	3
19-20	1	0	0	0	0	0	1	0	2	0	2	4
20-21	0	0	0	0	0	0	0	0	0	1	2	0
21-22	0	0	0	0	0	0	0	0	0	1	3	3
22-23	0	0	0	0	0	0	0	1	0	2	1	5
23-24	1	0	0	0	0	0	0	1	0	1	2	1

Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins											
	61 - 70		71 - 80		81 - 90		91 - 100		101 - 110		111 - 120	
	A	B	A	B	A	B	A	B	A	B	A	B
0 - 1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	31	2	71	1	79	0	49	1	19	0	6	0
17-18	47	3	111	3	125	2	65	0	32	0	8	0
18-19	18	2	54	3	75	5	54	3	29	0	14	0
19-20	7	1	40	2	37	2	26	0	22	0	7	0
20-21	13	1	17	2	23	2	26	1	7	1	6	0
21-22	12	1	24	0	20	1	8	0	9	0	6	0
22-23	7	3	22	0	33	0	17	0	7	0	5	0
23-24	3	1	11	0	7	0	5	0	2	0	0	0

Lane: 3 Page 3 of 3

Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins							
	121 - 130		131 - 140		141 - 150		151 +	
	A	B	A	B	A	B	A	B
0 - 1	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0
16-17	1	0	0	0	1	0	0	0
17-18	5	0	1	0	1	0	1	0
18-19	5	0	5	0	1	0	0	0
19-20	5	0	1	0	0	0	1	0
20-21	5	0	5	0	0	0	0	0
21-22	3	0	0	0	0	0	2	0
22-23	0	0	0	0	0	0	0	0
23-24	0	0	1	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Front Axle Weight Table

Number of Front Axles
Start Time: Tue May 16 16:18:59 1989
Collection Interval: Daily

Lane: 1 Page 1

Wt. Cat. (000's)	Classification 1	2	3	4	5	6	7	8
0 - 1	3060	31	0	0	1	0	0	0
1 - 2	10	5	1	0	0	0	0	0
2 - 3	0	5	1	0	0	1	1	0
3 - 4	0	0	0	0	0	2	1	0
4 - 5	0	0	0	0	0	1	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	0	0	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 +	0	0	0	0	0	0	0	0

Lane: 1 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	0	0	0	0	0	0	11	0
1 - 2	0	0	0	0	0	0	12	0
2 - 3	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	0	0	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Front Axle Weight Table

Number of Front Axles
Start Time: Tue May 16 16:18:59 1989
Collection Interval: Daily

Lane: 2 Page 1

Wt. Cat. (000's)		Classification 1	2	3	4	5	6	7	8
0 - 1		2753	3	5	2	0	0	1	1
1 - 2		3	0	0	1	0	0	0	0
2 - 3		0	1	0	0	0	0	0	0
3 - 4		0	0	0	0	0	0	0	0
4 - 5		0	0	1	0	0	0	0	0
5 - 6		0	0	0	0	0	0	0	0
6 - 7		0	0	0	0	0	0	0	0
7 - 8		0	0	0	0	0	0	0	0
8 - 9		0	0	0	0	0	0	0	0
9 - 10		0	0	0	0	0	0	0	0
10 - 11		0	0	0	0	0	0	0	0
11 - 12		0	0	0	0	0	0	0	0
12 - 13		0	0	0	0	0	0	0	0
13 - 14		0	0	0	0	0	0	0	0
14 - 15		0	0	0	0	0	0	0	0
15 +		0	0	0	0	0	0	0	0

Lane: 2 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	1	0	0	0	0	0	6	0
1 - 2	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	0	0	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Front Axle Weight Table

Number of Front Axles
Start Time: Tue May 16 16:18:59 1989
Collection Interval: Daily

Lane: 3 Page 1

Wt. (000's)	Cat.	Classification 1	2	3	4	5	6	7	8
0 -	1	1145	29	0	2	0	0	0	0
1 -	2	126	73	0	3	0	0	0	0
2 -	3	0	17	0	0	2	0	23	1
3 -	4	0	5	9	0	2	3	12	0
4 -	5	1	1	4	0	1	3	2	0
5 -	6	0	0	4	0	0	2	2	0
6 -	7	0	0	3	0	0	0	0	0
7 -	8	0	0	0	0	0	1	0	0
8 -	9	0	0	0	0	0	0	0	0
9 -	10	0	0	0	0	0	0	0	0
10 -	11	0	0	0	0	0	0	0	0
11 -	12	0	0	0	0	0	0	0	0
12 -	13	0	0	0	0	0	0	0	0
13 -	14	0	0	0	0	0	0	0	0
14 -	15	0	0	0	0	0	0	0	0
15 +		0	0	0	0	0	0	0	0

Lane: 3 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	0	0	0	0	0	0	11	0
1 - 2	0	0	0	0	0	0	3	0
2 - 3	0	0	0	1	0	0	0	0
3 - 4	1	1	0	1	0	0	0	0
4 - 5	1	1	0	1	0	0	0	0
5 - 6	0	0	0	1	1	0	0	0
6 - 7	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	1	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	0	0	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Tandem Axle Weight Table

Number of Tandem Axles

Start Time: Tue May 16 16:18:59 1989

Collection Interval: Daily
Lane: 1 Page 1

Wt. Cat. (000's)	Classification 1	2	3	4	5	6	7	8
0 - 1	2596	5	0	0	0	0	0	0
1 - 2	86	0	0	0	0	0	0	0
2 - 3	38	0	0	0	0	0	0	0
3 - 4	23	0	1	0	1	0	0	0
4 - 5	20	1	1	0	0	1	0	0
5 - 6	42	0	0	0	0	1	1	0
6 - 7	32	0	0	0	0	2	0	0
7 - 8	34	0	0	0	0	4	1	0
8 - 9	26	0	0	0	0	0	0	0
9 - 10	5	0	0	0	0	1	0	0
10 - 11	15	0	0	0	0	0	0	0
11 - 12	18	0	0	0	0	0	0	0
12 - 13	6	0	0	0	0	0	1	0
13 - 14	10	0	0	0	0	0	0	0
14 - 15	5	0	0	0	0	0	1	0
15 - 16	19	0	0	0	0	0	0	0
16 - 17	0	0	0	0	0	0	0	0
17 - 18	21	1	0	0	0	0	0	0
18 - 19	12	0	0	0	0	0	0	0
19 - 20	6	0	0	0	0	0	0	0
20 - 21	2	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	4	0	0	0	0	0	0	0
24 - 25	15	0	0	0	0	0	0	0
25 - 26	13	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

Lane: 1 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	0	0	0	0	0	0	15	0
1 - 2	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	3	0
3 - 4	0	0	0	0	0	0	6	0
4 - 5	0	0	0	0	0	0	5	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	2	0
7 - 8	0	0	0	0	0	0	1	0
8 - 9	0	0	0	0	0	0	0	0
9 - 10	0	0	0	0	0	0	1	0
10 - 11	0	0	0	0	0	0	1	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	1	0
14 - 15	0	0	0	0	0	0	0	0
15 - 16	0	0	0	0	0	0	0	0
16 - 17	0	0	0	0	0	0	0	0
17 - 18	0	0	0	0	0	0	1	0
18 - 19	0	0	0	0	0	0	0	0
19 - 20	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	1	0
24 - 25	0	0	0	0	0	0	1	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Tandem Axle Weight Table

Number of Tandem Axles

Start Time: Tue May 16 16:18:59 1989

Collection Interval: Daily

Lane: 2 Page 1

Wt. (000's)	Cat.	Classification 1	2	3	4	5	6	7	8
0 - 1	2108	0	9	2	0	0	2	2
1 - 2	13	0	2	1	0	0	0	0
2 - 3	5	0	1	0	0	0	0	0
3 - 4	4	0	1	0	0	0	0	0
4 - 5	3	0	0	0	0	0	0	0
5 - 6	6	0	3	0	0	0	0	0
6 - 7	4	0	0	0	0	0	0	0
7 - 8	7	0	0	0	0	0	0	0
8 - 9	2	0	1	0	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	2	0	1	0	0	0	0	0
11 - 12	1	0	1	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	2	0	0	0	0	0	0	0
14 - 15	1	0	0	0	0	0	0	0
15 - 16	2	0	0	0	0	0	0	0
16 - 17	0	0	1	0	0	0	0	0
17 - 18	0	0	0	0	0	0	0	0
18 - 19	2	0	0	0	0	0	0	0
19 - 20	2	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	1	0	0	0	0	0	0	0
25 - 26	2	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

Lane: 2 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	2	0	0	0	0	0	5	0
1 - 2	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	1	0
3 - 4	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	0	0	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 - 16	0	0	0	0	0	0	0	0
16 - 17	0	0	0	0	0	0	0	0
17 - 18	0	0	0	0	0	0	0	0
18 - 19	0	0	0	0	0	0	0	0
19 - 20	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Tandem Axle Weight Table

Number of Tandem Axles

Start Time: Tue May 16 16:18:59 1989

Collection Interval: Daily
Lane: 3 Page 1

Wt. (000's)	Cat.	Classification 1	2	3	4	5	6	7	8
0 - 1	301	0	0	0	0	0	0	0
1 - 2	121	0	0	0	1	0	0	0
2 - 3	31	0	0	0	0	0	1	0
3 - 4	4	0	0	0	0	1	2	0
4 - 5	0	0	1	0	1	0	4	0
5 - 6	0	0	1	0	2	1	4	0
6 - 7	0	0	1	0	0	0	7	0
7 - 8	0	0	2	0	0	2	8	0
8 - 9	0	0	3	0	1	0	10	0
9 - 10	0	0	0	0	0	2	4	0
10 - 11	0	0	1	0	0	4	4	0
11 - 12	0	0	1	0	0	1	6	0
12 - 13	0	0	2	0	0	2	9	1
13 - 14	0	0	1	0	0	2	4	0
14 - 15	0	0	0	0	0	1	6	0
15 - 16	0	0	1	0	0	0	3	0
16 - 17	0	0	3	0	0	0	1	0
17 - 18	0	0	2	0	0	0	2	0
18 - 19	0	0	0	0	0	0	2	0
19 - 20	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	1	0	0	0	0	0
22 - 23	0	0	0	0	0	0	1	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	0	0	0	0	0	0	4	0
1 - 2	0	0	0	0	0	0	0	0
2 - 3	0	0	0	1	0	0	7	0
3 - 4	0	0	0	0	0	0	1	0
4 - 5	0	0	0	1	0	0	1	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	1	0	0	0	0
9 - 10	0	0	0	0	0	0	1	0
10 - 11	0	0	0	2	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	1	0	0	0	0
13 - 14	0	1	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 - 16	1	0	0	0	1	0	0	0
16 - 17	0	0	0	0	0	0	0	0
17 - 18	0	1	0	2	0	0	0	0
18 - 19	0	0	0	2	0	0	0	0
19 - 20	1	1	0	1	1	0	0	0
20 - 21	1	1	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	1	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Tridem Axle Weight Table

Number of Tridem Axles

Start Time: Tue May 16 16:18:59 1989

Collection Interval: Daily

Lane: 1 Page 1

Wt. Cat. (000's)	Classification 1	2	3	4	5	6	7	8
0 - 2	11	0	0	0	0	0	0	0
2 - 4	1	0	0	0	0	0	0	0
4 - 6	2	0	0	0	0	0	0	0
6 - 8	0	0	0	0	0	0	0	0
8 - 10	0	0	0	0	0	0	0	0
10 - 12	0	0	0	0	0	0	0	0
12 - 14	0	0	0	0	0	0	0	0
14 - 16	0	0	0	0	0	0	0	0
16 - 18	0	0	0	0	0	0	0	0
18 - 20	0	0	0	0	0	0	0	0
20 - 22	0	0	0	0	0	0	0	0
22 - 24	5	0	0	0	0	0	0	0
24 - 26	0	0	0	0	0	0	0	0
26 - 28	0	0	0	0	0	0	0	0
28 - 30	0	0	0	0	0	0	0	0
30 - 32	0	0	0	0	0	0	0	0
32 - 34	0	0	0	0	0	0	0	0
34 - 36	0	0	0	0	0	0	0	0
36 - 38	0	0	0	0	0	0	0	0
38 - 40	0	0	0	0	0	0	0	0
40 - 42	0	0	0	0	0	0	0	0
42 - 44	0	0	0	0	0	0	0	0
44 - 46	0	0	0	0	0	0	0	0
46 - 48	0	0	0	0	0	0	0	0
48 - 50	0	0	0	0	0	0	0	0
50 - 52	0	0	0	0	0	0	0	0
52 - 54	0	0	0	0	0	0	0	0
54 - 56	0	0	0	0	0	0	0	0
56 - 58	0	0	0	0	0	0	0	0
58 - 60	0	0	0	0	0	0	0	0
60 - 62	0	0	0	0	0	0	0	0
62 +	0	0	0	0	0	0	0	0

Lane: 1 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 2	0	0	0	0	0	0	0	0
2 - 4	0	0	0	0	0	0	0	0
4 - 6	0	0	0	0	0	0	0	0
6 - 8	0	0	0	0	0	0	0	0
8 - 10	0	0	0	0	0	0	0	0
10 - 12	0	0	0	0	0	0	0	0
12 - 14	0	0	0	0	0	0	0	0
14 - 16	0	0	0	0	0	0	0	0
16 - 18	0	0	0	0	0	0	0	0
18 - 20	0	0	0	0	0	0	0	0
20 - 22	0	0	0	0	0	0	0	0
22 - 24	0	0	0	0	0	0	0	0
24 - 26	0	0	0	0	0	0	0	0
26 - 28	0	0	0	0	0	0	0	0
28 - 30	0	0	0	0	0	0	0	0
30 - 32	0	0	0	0	0	0	0	0
32 - 34	0	0	0	0	0	0	0	0
34 - 36	0	0	0	0	0	0	0	0
36 - 38	0	0	0	0	0	0	0	0
38 - 40	0	0	0	0	0	0	0	0
40 - 42	0	0	0	0	0	0	0	0
42 - 44	0	0	0	0	0	0	0	0
44 - 46	0	0	0	0	0	0	0	0
46 - 48	0	0	0	0	0	0	0	0
48 - 50	0	0	0	0	0	0	0	0
50 - 52	0	0	0	0	0	0	0	0
52 - 54	0	0	0	0	0	0	0	0
54 - 56	0	0	0	0	0	0	0	0
56 - 58	0	0	0	0	0	0	0	0
58 - 60	0	0	0	0	0	0	0	0
60 - 62	0	0	0	0	0	0	0	0
62 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Tridem Axle Weight Table

Number of Tridem Axles

Start Time: Tue May 16 16:18:59 1989

Collection Interval: Daily

Lane: 2 Page 1

Wt. Cat. (000's)	Classification 1	2	3	4	5	6	7	8
0 - 2	1	0	2	0	0	0	0	0
2 - 4	0	0	0	0	0	0	0	0
4 - 6	1	0	0	0	0	0	0	0
6 - 8	0	0	0	0	0	0	0	0
8 - 10	0	0	0	0	0	0	0	0
10 - 12	0	0	0	0	0	0	0	0
12 - 14	0	0	0	0	0	0	0	0
14 - 16	0	0	0	0	0	0	0	0
16 - 18	0	0	0	0	0	0	0	0
18 - 20	0	0	0	0	0	0	0	0
20 - 22	0	0	0	0	0	0	0	0
22 - 24	0	0	0	0	0	0	0	0
24 - 26	0	0	0	0	0	0	0	0
26 - 28	0	0	0	0	0	0	0	0
28 - 30	0	0	0	0	0	0	0	0
30 - 32	0	0	0	0	0	0	0	0
32 - 34	0	0	0	0	0	0	0	0
34 - 36	0	0	0	0	0	0	0	0
36 - 38	0	0	0	0	0	0	0	0
38 - 40	0	0	0	0	0	0	0	0
40 - 42	0	0	0	0	0	0	0	0
42 - 44	0	0	0	0	0	0	0	0
44 - 46	0	0	0	0	0	0	0	0
46 - 48	0	0	0	0	0	0	0	0
48 - 50	0	0	0	0	0	0	0	0
50 - 52	0	0	0	0	0	0	0	0
52 - 54	0	0	0	0	0	0	0	0
54 - 56	0	0	0	0	0	0	0	0
56 - 58	0	0	0	0	0	0	0	0
58 - 60	0	0	0	0	0	0	0	0
60 - 62	0	0	0	0	0	0	0	0
62 +	0	0	0	0	0	0	0	0

Lane: 2 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 2	0	0	0	0	0	0	0	0
2 - 4	0	0	0	0	0	0	0	0
4 - 6	0	0	0	0	0	0	0	0
6 - 8	0	0	0	0	0	0	0	0
8 - 10	0	0	0	0	0	0	0	0
10 - 12	0	0	0	0	0	0	0	0
12 - 14	0	0	0	0	0	0	0	0
14 - 16	0	0	0	0	0	0	0	0
16 - 18	0	0	0	0	0	0	0	0
18 - 20	0	0	0	0	0	0	0	0
20 - 22	0	0	0	0	0	0	0	0
22 - 24	0	0	0	0	0	0	0	0
24 - 26	0	0	0	0	0	0	0	0
26 - 28	0	0	0	0	0	0	0	0
28 - 30	0	0	0	0	0	0	0	0
30 - 32	0	0	0	0	0	0	0	0
32 - 34	0	0	0	0	0	0	0	0
34 - 36	0	0	0	0	0	0	0	0
36 - 38	0	0	0	0	0	0	0	0
38 - 40	0	0	0	0	0	0	0	0
40 - 42	0	0	0	0	0	0	0	0
42 - 44	0	0	0	0	0	0	0	0
44 - 46	0	0	0	0	0	0	0	0
46 - 48	0	0	0	0	0	0	0	0
48 - 50	0	0	0	0	0	0	0	0
50 - 52	0	0	0	0	0	0	0	0
52 - 54	0	0	0	0	0	0	0	0
54 - 56	0	0	0	0	0	0	0	0
56 - 58	0	0	0	0	0	0	0	0
58 - 60	0	0	0	0	0	0	0	0
60 - 62	0	0	0	0	0	0	0	0
62 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Tridem Axle Weight Table

Number of Tridem Axles

Start Time: Tue May 16 16:18:59 1989

Collection Interval: Daily

Lane: 3 Page 1

Wt. (000's)	Cat.	Classification 1	2	3	4	5	6	7	8
0 - 2		0	0	0	0	0	0	0	0
2 - 4		1	0	0	0	0	0	0	0
4 - 6		0	0	0	0	0	0	0	0
6 - 8		0	0	0	0	0	0	0	0
8 - 10		0	0	0	0	0	0	0	0
10 - 12		0	0	0	0	0	0	0	0
12 - 14		0	0	0	0	0	0	0	0
14 - 16		0	0	0	0	0	0	0	0
16 - 18		0	0	0	0	0	0	0	0
18 - 20		0	0	0	0	0	0	0	0
20 - 22		0	0	0	0	0	0	0	0
22 - 24		0	0	0	0	0	0	0	0
24 - 26		0	0	0	0	0	0	0	0
26 - 28		0	0	0	0	0	0	0	0
28 - 30		0	0	0	0	0	0	0	0
30 - 32		0	0	0	0	0	0	0	0
32 - 34		0	0	0	0	0	0	0	0
34 - 36		0	0	0	0	0	0	0	0
36 - 38		0	0	0	0	0	0	0	0
38 - 40		0	0	0	0	0	0	0	0
40 - 42		0	0	0	0	0	0	0	0
42 - 44		0	0	0	0	0	0	0	0
44 - 46		0	0	0	0	0	0	0	0
46 - 48		0	0	0	0	0	0	0	0
48 - 50		0	0	0	0	0	0	0	0
50 - 52		0	0	0	0	0	0	0	0
52 - 54		0	0	0	0	0	0	0	0
54 - 56		0	0	0	0	0	0	0	0
56 - 58		0	0	0	0	0	0	0	0
58 - 60		0	0	0	0	0	0	0	0
60 - 62		0	0	0	0	0	0	0	0
62 +		0	0	0	0	0	0	0	0

Lane: 3 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 2	0	0	0	0	0	0	0	0
2 - 4	0	0	0	0	0	0	0	0
4 - 6	0	0	0	0	0	0	0	0
6 - 8	0	0	0	0	0	0	0	0
8 - 10	0	0	0	0	0	0	0	0
10 - 12	0	0	0	0	0	0	0	0
12 - 14	0	0	0	0	0	0	0	0
14 - 16	0	0	0	0	0	0	0	0
16 - 18	1	0	0	0	0	0	0	0
18 - 20	0	0	0	0	0	0	0	0
20 - 22	0	0	0	0	0	0	0	0
22 - 24	0	0	0	0	1	0	0	0
24 - 26	0	0	0	0	0	0	0	0
26 - 28	0	0	0	0	0	0	0	0
28 - 30	0	0	0	0	0	0	0	0
30 - 32	0	0	0	0	0	0	0	0
32 - 34	0	0	0	0	0	0	0	0
34 - 36	0	0	0	0	0	0	0	0
36 - 38	0	0	0	0	0	0	0	0
38 - 40	0	0	0	0	0	0	0	0
40 - 42	0	0	0	0	0	0	0	0
42 - 44	0	0	0	0	0	0	0	0
44 - 46	0	0	0	0	0	0	0	0
46 - 48	0	0	0	0	0	0	0	0
48 - 50	0	0	0	0	0	0	0	0
50 - 52	0	0	0	0	0	0	0	0
52 - 54	0	0	0	0	0	0	0	0
54 - 56	0	0	0	0	0	0	0	0
56 - 58	0	0	0	0	0	0	0	0
58 - 60	0	0	0	0	0	0	0	0
60 - 62	0	0	0	0	0	0	0	0
62 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Single Axle Weight Table

Number of Single Axles

Start Time: Tue May 16 16:18:59 1989

Collection Interval: Daily

Lane: 1 Page 1

Wt. Cat. (000's)	Classification 1	2	3	4	5	6	7	8
0 - 1	1159	13	0	0	0	0	0	0
1 - 2	18	22	0	0	0	1	0	0
2 - 3	13	6	0	0	0	0	0	0
3 - 4	15	4	0	0	1	0	0	0
4 - 5	2	0	0	0	0	0	0	0
5 - 6	2	1	0	0	0	0	0	0
6 - 7	2	1	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	4	0	0	0	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	16	0	0	0	0	0	0	0
11 - 12	6	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 - 16	0	0	0	0	0	0	0	0
16 - 17	0	0	0	0	0	0	0	0
17 - 18	0	0	0	0	0	0	0	0
18 - 19	0	0	0	0	0	0	0	0
19 - 20	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

Lane: 1 Page 2 :

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	0	0	0	0	0	0	7	0
1 - 2	0	0	0	0	0	0	2	0
2 - 3	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	2	0
4 - 5	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	0	0	0	0	0	0	1	0
11 - 12	0	0	0	0	0	0	1	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 - 16	0	0	0	0	0	0	0	0
16 - 17	0	0	0	0	0	0	0	0
17 - 18	0	0	0	0	0	0	0	0
18 - 19	0	0	0	0	0	0	0	0
19 - 20	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Single Axle Weight Table

Number of Single Axles

Start Time: Tue May 16 16:18:59 1989

Collection Interval: Daily

Lane: 2 Page 1

Wt. Cat. (000's)	Classification 1	2	3	4	5	6	7	8
0 - 1	740	0	6	0	0	0	0	1
1 - 2	1	1	2	0	0	0	0	0
2 - 3	0	1	0	0	0	0	0	0
3 - 4	4	1	1	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	1	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	2	0	0	0	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	0	0	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 - 16	0	0	0	0	0	0	0	0
16 - 17	0	0	0	0	0	0	0	0
17 - 18	0	0	0	0	0	0	0	0
18 - 19	0	0	0	0	0	0	0	0
19 - 20	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 [illegible]	0	0	[illegible]	[illegible]	0	0	[illegible]	[illegible]

Lane: 2 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	1	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	0	0	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 - 16	0	0	0	0	0	0	0	0
16 - 17	0	0	0	0	0	0	0	0
17 - 18	0	0	0	0	0	0	0	0
18 - 19	0	0	0	0	0	0	0	0
19 - 20	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Single Axle Weight Table

Number of Single Axles

Start Time: Tue May 16 16:18:59 1989

Collection Interval: Daily

Lane: 3 Page 1

Wt. Cat. (000's)	Classification 1	2	3	4	5	6	7	8
0 - 1	834	35	0	4	0	0	0	0
1 - 2	3	64	0	3	0	0	0	0
2 - 3	0	6	0	0	0	1	0	0
3 - 4	0	5	0	1	0	0	0	0
4 - 5	0	8	0	0	2	0	0	0
5 - 6	1	4	0	1	1	0	0	0
6 - 7	0	1	0	1	1	0	0	2
7 - 8	0	1	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 - 10	0	0	0	0	1	0	0	0
10 - 11	0	1	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 - 16	0	0	0	0	0	0	0	0
16 - 17	0	0	0	0	0	0	0	0
17 - 18	0	0	0	0	0	0	0	0
18 - 19	0	0	0	0	0	0	0	0
19 - 20	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

Lane: 3 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0
3 - 4	0	0	0	2	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0
5 - 6	0	1	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	1	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	0	1	0	1	0	0	0	0
11 - 12	0	0	0	1	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 - 16	0	0	0	0	0	0	0	0
16 - 17	0	0	0	0	0	0	0	0
17 - 18	0	0	0	0	0	0	0	0
18 - 19	0	0	0	0	0	0	0	0
19 - 20	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Gross Vehicle Weight Table

Number of Vehicles

Start Time: Tue May 16 16:18:59 1989

Collection Interval: Daily
Lane: 1 Page 1

Wt. (000's)	Cat.	Classification 1	2	3	4	5	6	7	8
0 - 3		3011	20	0	0	0	0	0	0
3 - 6		1	17	0	0	0	0	0	0
6 - 9		0	3	2	0	0	0	0	0
9 - 12		0	0	0	0	1	1	0	0
12 - 15		0	0	0	0	0	2	0	0
15 - 18		0	0	0	0	0	0	0	0
18 - 21		0	0	0	0	0	1	1	0
21 - 24		0	0	0	0	0	0	0	0
24 - 27		0	0	0	0	0	0	0	0
27 - 30		0	0	0	0	0	0	0	0
30 - 33		0	0	0	0	0	0	1	0
33 - 36		0	0	0	0	0	0	0	0
36 - 39		0	0	0	0	0	0	0	0
39 - 42		0	0	0	0	0	0	0	0
42 - 45		0	0	0	0	0	0	0	0
45 - 48		0	0	0	0	0	0	0	0
48 - 51		0	0	0	0	0	0	0	0
51 - 54		0	0	0	0	0	0	0	0
54 - 57		0	0	0	0	0	0	0	0
57 - 60		58	1	0	0	0	0	0	0
60 - 63		0	0	0	0	0	0	0	0
63 - 66		0	0	0	0	0	0	0	0
66 - 69		0	0	0	0	0	0	0	0
69 - 72		0	0	0	0	0	0	0	0
72 - 75		0	0	0	0	0	0	0	0
75 - 78		0	0	0	0	0	0	0	0
78 - 81		0	0	0	0	0	0	0	0
81 - 84		0	0	0	0	0	0	0	0
84 - 87		0	0	0	0	0	0	0	0
87 - 90		0	0	0	0	0	0	0	0
90 - 93		0	0	0	0	0	0	0	0
93 +		0	0	0	0	0	0	0	0

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 3	0	0	0	0	0	0	10	0
3 - 6	0	0	0	0	0	0	11	0
6 - 9	0	0	0	0	0	0	0	0
9 - 12	0	0	0	0	0	0	1	0
12 - 15	0	0	0	0	0	0	0	0
15 - 18	0	0	0	0	0	0	0	0
18 - 21	0	0	0	0	0	0	0	0
21 - 24	0	0	0	0	0	0	0	0
24 - 27	0	0	0	0	0	0	0	0
27 - 30	0	0	0	0	0	0	0	0
30 - 33	0	0	0	0	0	0	0	0
33 - 36	0	0	0	0	0	0	0	0
36 - 39	0	0	0	0	0	0	0	0
39 - 42	0	0	0	0	0	0	0	0
42 - 45	0	0	0	0	0	0	0	0
45 - 48	0	0	0	0	0	0	0	0
48 - 51	0	0	0	0	0	0	0	0
51 - 54	0	0	0	0	0	0	0	0
54 - 57	0	0	0	0	0	0	0	0
57 - 60	0	0	0	0	0	0	1	0
60 - 63	0	0	0	0	0	0	0	0
63 - 66	0	0	0	0	0	0	0	0
66 - 69	0	0	0	0	0	0	0	0
69 - 72	0	0	0	0	0	0	0	0
72 - 75	0	0	0	0	0	0	0	0
75 - 78	0	0	0	0	0	0	0	0
78 - 81	0	0	0	0	0	0	0	0
81 - 84	0	0	0	0	0	0	0	0
84 - 87	0	0	0	0	0	0	0	0
87 - 90	0	0	0	0	0	0	0	0
90 - 93	0	0	0	0	0	0	0	0
93 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Gross Vehicle Weight Table

Number of Vehicles

Start Time: Tue May 16 16:18:59 1989

Collection Interval: Daily

Lane: 2 Page 1

Wt. (000's)	Cat.	Classification 1	2	3	4	5	6	7	8
0 - 3		2732	1	5	3	0	0	1	1
3 - 6		1	3	0	0	0	0	0	0
6 - 9		0	0	0	0	0	0	0	0
9 - 12		0	0	0	0	0	0	0	0
12 - 15		0	0	0	0	0	0	0	0
15 - 18		17	0	0	0	0	0	0	0
18 - 21		0	0	0	0	0	0	0	0
21 - 24		0	0	0	0	0	0	0	0
24 - 27		0	0	0	0	0	0	0	0
27 - 30		0	0	0	0	0	0	0	0
30 - 33		0	0	0	0	0	0	0	0
33 - 36		0	0	0	0	0	0	0	0
36 - 39		0	0	0	0	0	0	0	0
39 - 42		0	0	0	0	0	0	0	0
42 - 45		0	0	0	0	0	0	0	0
45 - 48		0	0	0	0	0	0	0	0
48 - 51		0	0	0	0	0	0	0	0
51 - 54		0	0	0	0	0	0	0	0
54 - 57		0	0	0	0	0	0	0	0
57 - 60		6	0	1	0	0	0	0	0
60 - 63		0	0	0	0	0	0	0	0
63 - 66		0	0	0	0	0	0	0	0
66 - 69		0	0	0	0	0	0	0	0
69 - 72		0	0	0	0	0	0	0	0
72 - 75		0	0	0	0	0	0	0	0
75 - 78		0	0	0	0	0	0	0	0
78 - 81		0	0	0	0	0	0	0	0
81 - 84		0	0	0	0	0	0	0	0
84 - 87		0	0	0	0	0	0	0	0
87 - 90		0	0	0	0	0	0	0	0
90 - 93		0	0	0	0	0	0	0	0
93 +		0	0	0	0	0	0	0	0

Lane: 2 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 3	1	0	0	0	0	0	6	0
3 - 6	0	0	0	0	0	0	0	0
6 - 9	0	0	0	0	0	0	0	0
9 - 12	0	0	0	0	0	0	0	0
12 - 15	0	0	0	0	0	0	0	0
15 - 18	0	0	0	0	0	0	0	0
18 - 21	0	0	0	0	0	0	0	0
21 - 24	0	0	0	0	0	0	0	0
24 - 27	0	0	0	0	0	0	0	0
27 - 30	0	0	0	0	0	0	0	0
30 - 33	0	0	0	0	0	0	0	0
33 - 36	0	0	0	0	0	0	0	0
36 - 39	0	0	0	0	0	0	0	0
39 - 42	0	0	0	0	0	0	0	0
42 - 45	0	0	0	0	0	0	0	0
45 - 48	0	0	0	0	0	0	0	0
48 - 51	0	0	0	0	0	0	0	0
51 - 54	0	0	0	0	0	0	0	0
54 - 57	0	0	0	0	0	0	0	0
57 - 60	0	0	0	0	0	0	0	0
60 - 63	0	0	0	0	0	0	0	0
63 - 66	0	0	0	0	0	0	0	0
66 - 69	0	0	0	0	0	0	0	0
69 - 72	0	0	0	0	0	0	0	0
72 - 75	0	0	0	0	0	0	0	0
75 - 78	0	0	0	0	0	0	0	0
78 - 81	0	0	0	0	0	0	0	0
81 - 84	0	0	0	0	0	0	0	0
84 - 87	0	0	0	0	0	0	0	0
87 - 90	0	0	0	0	0	0	0	0
90 - 93	0	0	0	0	0	0	0	0
93 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Gross Vehicle Weight Table

Number of Vehicles

Start Time: Tue May 16 16:18:59 1989

Collection Interval: Daily

Lane: 3 Page 1

Wt. (000's)	Cat.	Classification 1	2	3	4	5	6	7	8
0 - 3		1249	24	0	1	0	0	0	0
3 - 6		19	82	0	1	0	0	0	0
6 - 9		1	12	0	2	0	0	0	0
9 - 12		0	5	4	0	0	1	0	0
12 - 15		0	1	4	0	3	1	1	0
15 - 18		1	1	3	1	1	1	4	0
18 - 21		0	0	3	0	0	2	8	0
21 - 24		0	0	2	0	1	2	6	0
24 - 27		0	0	3	0	0	0	4	0
27 - 30		0	0	1	0	0	2	4	0
30 - 33		0	0	0	0	0	0	5	1
33 - 36		0	0	0	0	0	0	4	0
36 - 39		0	0	0	0	0	0	1	0
39 - 42		0	0	0	0	0	0	2	0
42 - 45		0	0	0	0	0	0	0	0
45 - 48		0	0	0	0	0	0	0	0
48 - 51		0	0	0	0	0	0	0	0
51 - 54		0	0	0	0	0	0	0	0
54 - 57		0	0	0	0	0	0	0	0
57 - 60		2	0	0	0	0	0	0	0
60 - 63		0	0	0	0	0	0	0	0
63 - 66		0	0	0	0	0	0	0	0
66 - 69		0	0	0	0	0	0	0	0
69 - 72		0	0	0	0	0	0	0	0
72 - 75		0	0	0	0	0	0	0	0
75 - 78		0	0	0	0	0	0	0	0
78 - 81		0	0	0	0	0	0	0	0
81 - 84		0	0	0	0	0	0	0	0
84 - 87		0	0	0	0	0	0	0	0
87 - 90		0	0	0	0	0	0	0	0
90 - 93		0	0	0	0	0	0	0	0
93 +		0	0	0	0	0	0	0	0

Lane: 3 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 3	0	0	0	0	0	0	11	0
3 - 6	0	0	0	0	0	0	2	0
6 - 9	0	0	0	0	0	0	0	0
9 - 12	0	0	0	0	0	0	1	0
12 - 15	0	0	0	0	0	0	0	0
15 - 18	0	0	0	0	0	0	0	0
18 - 21	0	0	0	0	0	0	0	0
21 - 24	0	0	0	1	0	0	0	0
24 - 27	0	0	0	0	0	0	0	0
27 - 30	0	0	0	0	0	0	0	0
30 - 33	0	0	0	0	0	0	0	0
33 - 36	0	0	0	0	0	0	0	0
36 - 39	1	0	0	0	0	0	0	0
39 - 42	0	0	0	0	0	0	0	0
42 - 45	0	0	0	1	0	0	0	0
45 - 48	0	0	0	0	0	0	0	0
48 - 51	0	1	0	0	0	0	0	0
51 - 54	0	1	0	0	0	0	0	0
54 - 57	1	0	0	1	0	0	0	0
57 - 60	0	0	0	0	0	0	0	0
60 - 63	0	0	0	0	0	0	0	0
63 - 66	0	0	0	1	0	0	0	0
66 - 69	0	0	0	0	1	0	0	0
69 - 72	0	0	0	1	0	0	0	0
72 - 75	0	0	0	0	0	0	0	0
75 - 78	0	0	0	0	0	0	0	0
78 - 81	0	0	0	0	0	0	0	0
81 - 84	0	0	0	0	0	0	0	0
84 - 87	0	0	0	0	0	0	0	0
87 - 90	0	0	0	0	0	0	0	0
90 - 93	0	0	0	0	0	0	0	0
93 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Classification Table

Start Time: Wed May 17 00:00:17 1989

Lane: 1 Page 1

Time	Classification											
	1	2	3	4	5	6	7	8	9	10	11	12
0 - 1	87	4	0	0	0	0	0	0	0	0	0	0
1 - 2	31	1	0	0	0	0	0	0	0	0	0	0
2 - 3	19	1	0	0	0	0	0	0	0	0	0	0
3 - 4	12	1	0	0	0	0	0	0	0	0	0	0
4 - 5	10	0	0	0	0	0	0	0	0	0	0	0
5 - 6	46	3	1	0	0	0	0	0	0	0	0	1
6 - 7	333	24	7	1	0	1	1	0	1	0	0	0
7 - 8	441	34	3	0	0	0	1	0	0	1	0	0
8 - 9	461	33	1	1	0	0	2	0	0	0	0	0
9 -10	207	5	4	0	1	0	0	0	0	0	0	0
10-11	164	6	2	0	0	0	0	0	0	0	0	0
11-12	65	0	1	0	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0	0	0	0	0
17-18	0	0	0	0	0	0	0	0	0	0	0	0
18-19	0	0	0	0	0	0	0	0	0	0	0	0
19-20	0	0	0	0	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0	0	0	0	0
21-22	0	0	0	0	0	0	0	0	0	0	0	0
22-23	0	0	0	0	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0	0	0	0	0

Time	Classification											
	13	14	15	16	17	18	19	20	21	22	23	24
0 - 1	0	0	1	0	0	0	0	0	0	0	0	0
1 - 2	0	0	1	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	1	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0	0	0	0	0
6 - 7	0	0	1	0	0	0	0	0	0	0	0	0
7 - 8	0	0	1	0	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0	0	0	0	0
17-18	0	0	0	0	0	0	0	0	0	0	0	0
18-19	0	0	0	0	0	0	0	0	0	0	0	0
19-20	0	0	0	0	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0	0	0	0	0
21-22	0	0	0	0	0	0	0	0	0	0	0	0
22-23	0	0	0	0	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Classification Table

Start Time: Wed May 17 00:00:17 1989

Lane: 2 Page 1

Time	Classification 1	2	3	4	5	6	7	8	9	10	11	12
0 - 1	102	0	1	0	0	0	1	0	0	0	0	0
1 - 2	52	0	0	0	0	0	0	0	0	0	0	0
2 - 3	27	0	2	0	0	0	0	1	0	0	0	0
3 - 4	23	0	0	0	0	0	1	0	1	0	0	0
4 - 5	22	0	0	0	0	0	0	0	0	0	0	0
5 - 6	84	2	1	0	0	0	0	0	0	0	0	0
6 - 7	350	0	0	0	0	0	0	0	0	0	0	0
7 - 8	432	1	4	0	0	0	3	4	0	0	0	0
8 - 9	409	4	14	1	0	0	7	2	1	1	0	3
9 -10	449	5	2	0	0	0	1	0	0	0	0	0
10-11	426	2	1	1	0	0	0	0	0	0	0	1
11-12	314	3	8	0	0	0	0	0	0	1	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0	0	0	0	0
17-18	0	0	0	0	0	0	0	0	0	0	0	0
18-19	0	0	0	0	0	0	0	0	0	0	0	0
19-20	0	0	0	0	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0	0	0	0	0
21-22	0	0	0	0	0	0	0	0	0	0	0	0
22-23	0	0	0	0	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0	0	0	0	0

Lane: 2 Page 2

Time	Classification 13	14	15	16	17	18	19	20	21	22	23	24
0 - 1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0	0	0	0	0
9 -10	0	0	1	0	0	0	0	0	0	0	0	0
10-11	0	0	1	0	0	0	0	0	0	0	0	0
11-12	0	0	4	0	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0	0	0	0	0
17-18	0	0	0	0	0	0	0	0	0	0	0	0
18-19	0	0	0	0	0	0	0	0	0	0	0	0
19-20	0	0	0	0	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0	0	0	0	0
21-22	0	0	0	0	0	0	0	0	0	0	0	0
22-23	0	0	0	0	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Classification Table

Start Time: Wed May 17 00:00:17 1989

Lane: 3

Time	Classification 1	2	3	4	5	6	7	8	9	10	11	12
0 - 1	23	2	1	0	0	0	1	0	0	0	0	0
1 - 2	6	0	0	0	0	0	0	0	0	0	0	0
2 - 3	4	0	0	0	0	0	0	0	0	0	0	0
3 - 4	4	1	1	0	0	0	0	0	0	0	0	0
4 - 5	4	0	0	0	0	0	0	0	0	0	0	0
5 - 6	8	5	2	0	0	0	1	1	1	1	0	0
6 - 7	91	20	26	0	2	1	3	0	3	1	0	0
7 - 8	173	29	12	1	4	1	10	0	1	0	0	2
8 - 9	180	42	13	2	1	1	3	0	0	0	0	1
9 -10	236	73	22	7	9	4	26	1	0	5	0	0
10-11	318	73	23	2	3	2	16	0	0	1	0	1
11-12	687	64	20	6	4	8	26	0	1	2	0	2
12-13	132	9	9	0	0	0	2	0	0	1	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0	0	0	0	0
17-18	0	0	0	0	0	0	0	0	0	0	0	0
18-19	0	0	0	0	0	0	0	0	0	0	0	0
19-20	0	0	0	0	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0	0	0	0	0
21-22	0	0	0	0	0	0	0	0	0	0	0	0
22-23	0	0	0	0	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0	0	0	0	0

Time	Classification											
	13	14	15	16	17	18	19	20	21	22	23	24
0 - 1	0	0	0	0	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	1	0	0	0	0	0	0	0	0	0	0
6 - 7	0	0	1	0	0	0	0	0	0	0	0	0
7 - 8	1	0	3	0	0	0	0	0	0	0	0	0
8 - 9	0	0	5	0	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0	0	0	0	0
10-11	0	0	2	0	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0	0	0	0	0
17-18	0	0	0	0	0	0	0	0	0	0	0	0
18-19	0	0	0	0	0	0	0	0	0	0	0	0
19-20	0	0	0	0	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0	0	0	0	0
21-22	0	0	0	0	0	0	0	0	0	0	0	0
22-23	0	0	0	0	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Speed Distribution Table

Start Time: Wed May 17 00:00:17 1989

Lane: 1 Page 1 of 3

Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins											
	0 - 10		11 - 20		21 - 30		31 - 40		41 - 50		51 - 60	
	A	B	A	B	A	B	A	B	A	B	A	B
0 - 1	0	0	0	0	0	0	0	0	1	0	10	0
1 - 2	0	0	0	0	0	0	0	0	0	0	2	0
2 - 3	0	0	0	0	0	0	0	0	0	0	2	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0	0	0	2	0
6 - 7	0	0	1	0	0	0	0	0	1	1	41	1
7 - 8	8	0	2	0	0	0	0	0	6	2	55	0
8 - 9	6	0	0	0	0	0	0	0	3	1	37	0
9 -10	2	0	0	0	1	0	0	0	3	0	24	0
10-11	1	0	2	0	0	0	1	0	0	0	12	0
11-12	3	0	2	0	0	0	1	0	10	0	11	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0	0	0	0	0
17-18	0	0	0	0	0	0	0	0	0	0	0	0
18-19	0	0	0	0	0	0	0	0	0	0	0	0
19-20	0	0	0	0	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0	0	0	0	0
21-22	0	0	0	0	0	0	0	0	0	0	0	0
22-23	0	0	0	0	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0	0	0	0	0

Lane: 1 Page 2 of 3

Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins																	
	61 - 70		71 - 80		81 - 90		91 - 100		101 - 110		111 - 120	
	A	B	A	B	A	B	A	B	A	B	A	B
0 - 1	25	0	30	0	22	0	1	0	2	0	0	1
1 - 2	8	0	15	1	5	0	2	0	0	0	0	0
2 - 3	4	0	11	0	2	0	0	0	1	0	0	0
3 - 4	5	0	6	0	2	0	0	0	0	0	0	0
4 - 5	3	0	4	0	2	2	1	0	0	0	0	0
5 - 6	12	0	16	0	13	0	6	0	1	0	0	0
6 - 7	138	2	124	0	43	0	11	0	3	0	3	0
7 - 8	200	0	152	1	43	0	9	0	3	0	0	0
8 - 9	219	0	165	0	43	1	19	0	3	0	1	0
9 -10	84	1	73	0	24	0	4	0	1	0	0	0
10-11	78	0	50	0	24	0	4	0	0	0	0	0
11-12	21	0	11	0	4	0	1	0	1	0	1	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0	0	0	0	0
17-18	0	0	0	0	0	0	0	0	0	0	0	0
18-19	0	0	0	0	0	0	0	0	0	0	0	0
19-20	0	0	0	0	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0	0	0	0	0
21-22	0	0	0	0	0	0	0	0	0	0	0	0
22-23	0	0	0	0	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0	0	0	0	0

Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins															
	121 - 130		131 - 140		141 - 150		151 +									
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
0 - 1	0	0	0	0	0	0	0	0								
1 - 2	0	0	0	0	0	0	0	0								
2 - 3	0	0	0	0	0	0	0	0								
3 - 4	0	0	0	0	0	0	0	0								
4 - 5	0	0	0	0	0	0	0	0								
5 - 6	0	0	0	0	0	0	0	0								
6 - 7	0	0	0	0	0	0	0	0								
7 - 8	0	0	0	0	0	0	0	0								
8 - 9	0	0	0	0	0	0	0	0								
9 -10	0	0	0	0	0	0	0	0								
10-11	0	0	0	0	0	0	0	0								
11-12	0	0	0	0	0	0	0	0								
12-13	0	0	0	0	0	0	0	0								
13-14	0	0	0	0	0	0	0	0								
14-15	0	0	0	0	0	0	0	0								
15-16	0	0	0	0	0	0	0	0								
16-17	0	0	0	0	0	0	0	0								
17-18	0	0	0	0	0	0	0	0								
18-19	0	0	0	0	0	0	0	0								
19-20	0	0	0	0	0	0	0	0								
20-21	0	0	0	0	0	0	0	0								
21-22	0	0	0	0	0	0	0	0								
22-23	0	0	0	0	0	0	0	0								
23-24	0	0	0	0	0	0	0	0								

International Road Dynamics
Low Cost
Weigh In Motion System

Speed Distribution Table

Start Time: Wed May 17 00:00:17 1989

Lane: 2 Page 1 of 3

Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins											
	0 - 10		11 - 20		21 - 30		31 - 40		41 - 50		51 - 60	
	A	B	A	B	A	B	A	B	A	B	A	B
0 - 1	0	0	0	0	0	0	2	0	0	0	8	0
1 - 2	0	0	0	0	0	0	0	0	2	0	5	0
2 - 3	0	0	0	0	0	0	0	0	0	0	1	0
3 - 4	0	0	0	0	0	0	0	0	1	0	1	0
4 - 5	0	0	0	0	0	0	1	0	0	0	0	0
5 - 6	1	0	0	0	0	0	0	0	1	0	13	0
6 - 7	0	0	0	0	0	0	1	0	23	0	49	0
7 - 8	4	0	2	0	0	0	1	0	14	3	63	3
8 - 9	3	0	0	0	0	0	1	1	17	1	35	5
9 -10	4	0	3	1	0	0	0	0	7	0	62	1
10-11	9	0	1	0	0	1	0	0	3	0	58	1
11-12	35	0	8	0	1	1	8	2	21	0	72	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0	0	0	0	0
17-18	0	0	0	0	0	0	0	0	0	0	0	0
18-19	0	0	0	0	0	0	0	0	0	0	0	0
19-20	0	0	0	0	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0	0	0	0	0
21-22	0	0	0	0	0	0	0	0	0	0	0	0
22-23	0	0	0	0	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0	0	0	0	0

Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins											
	61 - 70		71 - 80		81 - 90		91 - 100		101 - 110		111 - 120	
	A	B	A	B	A	B	A	B	A	B	A	B
0 - 1	36	1	34	0	15	0	6	0	2	0	0	0
1 - 2	12	0	17	0	7	0	6	0	3	0	0	0
2 - 3	9	1	8	0	9	0	1	0	1	0	0	0
3 - 4	7	0	8	1	3	1	3	0	0	0	0	0
4 - 5	4	0	9	0	4	0	4	0	0	0	0	0
5 - 6	15	0	15	0	28	0	11	0	3	0	0	0
6 - 7	108	0	92	0	51	0	25	0	0	0	1	0
7 - 8	133	1	127	0	60	0	25	0	6	0	1	0
8 - 9	135	3	129	4	72	0	28	0	5	0	3	0
9 -10	198	0	132	0	43	0	7	0	0	0	0	0
10-11	178	0	135	0	37	0	9	0	0	0	0	0
11-12	97	2	51	0	23	0	7	0	2	0	0	0
12-13	0	0	0	0	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0	0	0	0	0
17-18	0	0	0	0	0	0	0	0	0	0	0	0
18-19	0	0	0	0	0	0	0	0	0	0	0	0
19-20	0	0	0	0	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0	0	0	0	0
21-22	0	0	0	0	0	0	0	0	0	0	0	0
22-23	0	0	0	0	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0	0	0	0	0

Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins							
	121 - 130		131 - 140		141 - 150		151 +	
	A	B	A	B	A	B	A	B
0 - 1	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0
7 - 8	1	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 -10	0	0	0	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0
11-12	0	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0
17-18	0	0	0	0	0	0	0	0
18-19	0	0	0	0	0	0	0	0
19-20	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0
21-22	0	0	0	0	0	0	0	0
22-23	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Speed Distribution Table

Start Time: Wed May 17 00:00:17 1989

Lane: 3 Page 1 of 3

Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins											
	0 - 10		11 - 20		21 - 30		31 - 40		41 - 50		51 - 60	
	A	B	A	B	A	B	A	B	A	B	A	B
0 - 1	0	0	0	0	1	0	0	0	0	0	1	0
1 - 2	0	0	0	0	0	0	0	0	0	0	1	0
2 - 3	0	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	1	0	1	3	0
6 - 7	0	0	0	0	0	0	1	1	2	1	4	4
7 - 8	1	0	1	0	0	0	2	2	7	7	6	6
8 - 9	3	0	3	0	2	2	3	0	4	0	11	2
9 -10	2	0	5	0	0	0	1	1	19	13	44	17
10-11	11	0	8	1	3	0	1	0	8	6	60	9
11-12	127	0	54	2	13	0	6	8	67	14	177	9
12-13	0	0	0	0	0	0	6	0	39	2	60	1
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0	0	0	0	0
17-18	0	0	0	0	0	0	0	0	0	0	0	0
18-19	0	0	0	0	0	0	0	0	0	0	0	0
19-20	0	0	0	0	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0	0	0	0	0
21-22	0	0	0	0	0	0	0	0	0	0	0	0
22-23	0	0	0	0	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0	0	0	0	0

Lane: 3 Page 2 of 3

Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins											
	61 - 70		71 - 80		81 - 90		91 - 100		101 - 110		111 - 120	
	A	B	A	B	A	B	A	B	A	B	A	B
0 - 1	6	1	5	0	8	0	2	0	2	0	1	0
1 - 2	0	0	1	0	4	0	0	0	0	0	0	0
2 - 3	0	0	1	0	0	0	1	0	2	0	0	0
3 - 4	1	0	4	0	0	0	0	0	0	0	0	0
4 - 5	1	0	1	0	1	0	1	0	0	0	0	0
5 - 6	2	1	3	0	5	1	1	1	1	0	0	0
6 - 7	25	0	29	3	37	1	16	1	16	0	5	0
7 - 8	29	4	51	0	51	1	42	1	21	0	2	1
8 - 9	32	2	73	1	48	1	41	2	10	1	6	0
9 -10	96	8	108	6	47	0	13	0	2	0	0	0
10-11	134	8	114	0	60	0	17	0	0	1	0	0
11-12	164	7	101	3	44	0	14	0	7	0	1	0
12-13	25	0	17	0	3	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0	0	0	0	0
17-18	0	0	0	0	0	0	0	0	0	0	0	0
18-19	0	0	0	0	0	0	0	0	0	0	0	0
19-20	0	0	0	0	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0	0	0	0	0
21-22	0	0	0	0	0	0	0	0	0	0	0	0
22-23	0	0	0	0	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0	0	0	0	0

Lane: 3 Page 3 of 3

Classification: A(Class 1 - 4) B(Class 5 -24)

Time	Speed Bins							
	121 - 130		131 - 140		141 - 150		151 +	
	A	B	A	B	A	B	A	B
0 - 1	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0
3 - 4	1	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	1	0	1	0	0	0	0	0
10-11	0	0	0	0	0	0	0	0
11-12	2	0	0	0	0	0	0	0
12-13	0	0	0	0	0	0	0	0
13-14	0	0	0	0	0	0	0	0
14-15	0	0	0	0	0	0	0	0
15-16	0	0	0	0	0	0	0	0
16-17	0	0	0	0	0	0	0	0
17-18	0	0	0	0	0	0	0	0
18-19	0	0	0	0	0	0	0	0
19-20	0	0	0	0	0	0	0	0
20-21	0	0	0	0	0	0	0	0
21-22	0	0	0	0	0	0	0	0
22-23	0	0	0	0	0	0	0	0
23-24	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Front Axle Weight Table

Number of Front Axles
Start Time: Wed May 17 00:00:17 1989
Collection Interval: Daily

Lane: 1 Page 1

Wt. Cat. (000's)			Classification 1	2	3	4	5	6	7	8
0	-	1	1872	81	2	1	1	0	0	0
1	-	2	4	19	1	0	0	0	1	0
2	-	3	0	10	2	0	0	0	0	0
3	-	4	0	2	2	1	0	0	0	0
4	-	5	0	0	4	0	0	1	2	0
5	-	6	0	0	3	0	0	0	1	0
6	-	7	0	0	3	0	0	0	0	0
7	-	8	0	0	2	0	0	0	0	0
8	-	9	0	0	0	0	0	0	0	0
9	-	10	0	0	0	0	0	0	0	0
10	-	11	0	0	0	0	0	0	0	0
11	-	12	0	0	0	0	0	0	0	0
12	-	13	0	0	0	0	0	0	0	0
13	-	14	0	0	0	0	0	0	0	0
14	-	15	0	0	0	0	0	0	0	0
15	+		0	0	0	0	0	0	0	0

Lane: 1 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	0	0	0	0	0	0	1	0
1 - 2	0	0	0	0	0	0	3	0
2 - 3	0	0	0	0	0	0	1	0
3 - 4	1	0	0	0	0	0	0	0
4 - 5	0	0	0	1	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	1	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	0	0	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Front Axle Weight Table

Number of Front Axles
Start Time: Wed May 17 00:00:17 1989
Collection Interval: Daily

Lane: 3 Page 1

Wt. (000's)	Cat.	Classification 1	2	3	4	5	6	7	8
0 - 1		1780	116	10	9	0	0	5	1
1 - 2		84	144	11	6	9	1	13	1
2 - 3		2	44	21	2	13	3	45	0
3 - 4		0	6	28	1	1	6	15	0
4 - 5		0	2	24	0	0	3	2	0
5 - 6		0	4	10	0	0	1	3	0
6 - 7		0	0	12	0	0	0	3	0
7 - 8		0	0	7	0	0	2	2	0
8 - 9		0	0	2	0	0	1	0	0
9 - 10		0	0	1	0	0	0	0	0
10 - 11		0	0	2	0	0	0	0	0
11 - 12		0	0	0	0	0	0	0	0
12 - 13		0	0	0	0	0	0	0	0
13 - 14		0	0	1	0	0	0	0	0
14 - 15		0	0	0	0	0	0	0	0
15 +		0	2	0	0	0	0	0	0

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	0	0	0	1	0	0	6	0
1 - 2	1	0	0	1	0	0	4	0
2 - 3	3	5	0	1	0	1	1	0
3 - 4	0	4	0	1	0	0	0	0
4 - 5	0	2	0	0	0	0	0	0
5 - 6	0	0	0	1	0	0	0	0
6 - 7	1	0	0	0	0	0	0	0
7 - 8	0	0	0	0	1	0	0	0
8 - 9	0	0	0	1	0	0	0	0
9 - 10	1	0	0	0	0	0	0	0
10 - 11	0	0	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Tandem Axle Weight Table

Number of Tandem Axles

Start Time: Wed May 17 00:00:17 1989

Collection Interval: Daily
Lane: 1 Page 1

Wt. (000's)	Cat.	Classification 1	2	3	4	5	6	7	8
0 - 1		1389	15	1	0	0	0	1	0
1 - 2		63	0	1	0	0	0	0	0
2 - 3		22	1	0	0	0	0	0	0
3 - 4		32	1	0	0	0	0	1	0
4 - 5		38	1	0	0	1	0	0	0
5 - 6		24	0	1	0	0	0	1	0
6 - 7		34	0	2	0	0	1	1	0
7 - 8		22	2	2	0	0	0	0	0
8 - 9		19	0	0	0	0	0	1	0
9 - 10		15	0	2	0	0	1	2	0
10 - 11		12	0	5	0	0	0	0	0
11 - 12		9	0	1	0	0	0	0	0
12 - 13		14	0	2	0	0	0	0	0
13 - 14		7	0	1	0	0	0	1	0
14 - 15		3	0	0	0	0	0	0	0
15 - 16		8	0	1	0	0	0	0	0
16 - 17		9	0	0	0	0	0	0	0
17 - 18		5	0	0	0	0	0	0	0
18 - 19		8	0	0	0	0	0	0	0
19 - 20		9	0	0	0	0	0	0	0
20 - 21		1	0	0	0	0	0	0	0
21 - 22		0	0	0	0	0	0	0	0
22 - 23		2	0	0	0	0	0	0	0
23 - 24		0	0	0	0	0	0	0	0
24 - 25		10	0	0	0	0	0	0	0
25 - 26		1	0	0	0	0	0	0	0
26 - 27		4	0	0	0	0	0	0	0
27 - 28		0	0	0	0	0	0	0	0
28 - 29		0	0	0	0	0	0	0	0
29 - 30		0	0	0	0	0	0	0	0
30 - 31		0	0	0	0	0	0	0	0
31 +		2	0	0	0	0	0	0	0

Lane: 1 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	0	0	0	0	0	0	1	0
1 - 2	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	1	0
3 - 4	0	0	0	0	0	0	2	0
4 - 5	0	1	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	1	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	0	1	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	1	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 - 16	1	0	0	1	0	0	0	0
16 - 17	0	0	0	0	0	0	0	0
17 - 18	0	0	0	0	0	0	0	0
18 - 19	0	0	0	0	0	0	0	0
19 - 20	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Tandem Axle Weight Table

Number of Tandem Axles

Start Time: Wed May 17 00:00:17 1989

Collection Interval: Daily
Lane: 2 Page 1

Wt. (000's)	Cat.	Classification 1	2	3	4	5	6	7	8
0	- 1	1888	13	31	1	0	0	25	4
1	- 2	84	0	0	0	0	0	1	3
2	- 3	62	3	0	0	0	0	0	0
3	- 4	68	2	0	0	0	0	0	0
4	- 5	74	3	0	0	0	0	0	0
5	- 6	61	3	0	0	0	0	0	0
6	- 7	37	1	0	0	0	0	0	0
7	- 8	69	0	0	0	0	0	0	0
8	- 9	48	5	0	0	0	0	0	0
9	- 10	19	4	1	0	0	0	0	0
10	- 11	37	1	0	0	0	0	0	0
11	- 12	16	2	0	0	0	0	0	0
12	- 13	31	1	1	0	0	0	0	0
13	- 14	11	1	0	0	0	0	0	0
14	- 15	9	0	0	0	0	0	0	0
15	- 16	11	1	0	0	0	0	0	0
16	- 17	14	1	0	0	0	0	0	0
17	- 18	6	0	0	0	0	0	0	0
18	- 19	0	0	0	0	0	0	0	0
19	- 20	6	0	0	0	0	0	0	0
20	- 21	0	0	0	0	0	0	0	0
21	- 22	0	0	0	0	0	0	0	0
22	- 23	0	0	0	0	0	0	0	0
23	- 24	0	0	0	0	0	0	0	0
24	- 25	9	1	0	0	0	0	0	0
25	- 26	0	0	0	0	0	0	0	0
26	- 27	1	0	0	0	0	0	0	0
27	- 28	0	0	0	0	0	0	0	0
28	- 29	0	0	0	0	0	0	0	0
29	- 30	0	0	0	0	0	0	0	0
30	- 31	0	0	0	0	0	0	0	0
31	+	0	0	0	0	0	0	0	0

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	3	2	0	11	0	0	4	0
1 - 2	0	1	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	1	0
4 - 5	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	1	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	0	0	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 - 16	0	0	0	0	0	0	0	0
16 - 17	0	2	0	0	0	0	0	0
17 - 18	0	0	0	0	0	0	0	0
18 - 19	0	0	0	0	0	0	0	0
19 - 20	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Tandem Axle Weight Table

Number of Tandem Axles

Start Time: Wed May 17 00:00:17 1989

Collection Interval: Daily
Lane: 3 Page 1

Wt. (000's)	Cat.	Classification 1	2	3	4	5	6	7	8
0 - 1	1250	26	30	0	2	6	8	0
1 - 2	355	0	8	0	1	3	7	0
2 - 3	310	4	10	0	1	1	10	0
3 - 4	220	4	9	0	3	1	15	0
4 - 5	272	7	9	0	4	4	11	0
5 - 6	228	6	16	0	2	1	14	0
6 - 7	169	4	16	0	4	5	14	0
7 - 8	275	1	13	0	3	4	20	0
8 - 9	170	12	18	0	0	1	18	1
9 - 10	95	7	10	0	2	1	14	1
10 - 11	125	0	13	0	0	3	11	0
11 - 12	71	0	9	0	0	1	10	0
12 - 13	120	4	12	0	0	1	10	0
13 - 14	23	4	6	0	1	6	9	0
14 - 15	33	0	9	0	0	3	4	0
15 - 16	41	0	6	0	0	1	7	0
16 - 17	66	3	2	0	0	0	6	0
17 - 18	31	0	3	0	0	0	3	0
18 - 19	1	0	6	0	0	1	1	0
19 - 20	2	0	6	0	0	2	4	0
20 - 21	0	0	3	0	0	0	1	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	1	0	0	0	2	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	41	0	3	0	0	0	1	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	1	0	0	0	0	0	0	0
27 - 28	0	0	1	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	1	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	0	0	0	0	0	0	4	0
1 - 2	0	1	0	1	0	0	0	0
2 - 3	0	2	0	1	0	0	1	0
3 - 4	0	0	0	1	0	0	4	0
4 - 5	0	2	0	0	0	0	1	0
5 - 6	1	1	0	1	0	0	0	0
6 - 7	0	0	0	2	0	0	1	0
7 - 8	2	0	0	0	0	0	0	0
8 - 9	0	1	0	3	0	0	0	0
9 - 10	1	2	0	1	0	0	0	0
10 - 11	0	0	0	1	1	0	0	0
11 - 12	0	0	0	2	0	0	0	0
12 - 13	0	1	0	0	0	0	0	0
13 - 14	1	1	0	1	0	0	0	0
14 - 15	0	1	0	1	0	0	0	0
15 - 16	0	1	0	1	0	0	0	0
16 - 17	0	4	0	1	0	0	0	0
17 - 18	0	1	0	0	0	0	0	0
18 - 19	0	1	0	1	0	1	0	0
19 - 20	1	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	1	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	0	1	0	0	1	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	1	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	1	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	1	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Triden Axle Weight Table

Number of Triden Axles

Start Time: Wed May 17 00:00:17 1989

Collection Interval: Daily

Lane: 1 Page 1

Wt. Cat. (000's)	Classification 1	2	3	4	5	6	7	8
0 - 2	33	1	0	0	0	0	0	0
2 - 4	7	0	0	0	0	0	0	0
4 - 6	0	0	0	0	0	0	0	0
6 - 8	0	0	0	0	0	0	0	0
8 - 10	4	0	0	0	0	0	0	0
10 - 12	0	0	0	0	0	0	0	0
12 - 14	2	0	0	0	0	0	0	0
14 - 16	0	0	0	0	0	0	0	0
16 - 18	0	0	0	0	0	0	0	0
18 - 20	0	0	0	0	0	0	0	0
20 - 22	0	0	0	0	0	0	0	0
22 - 24	0	0	0	0	0	0	0	0
24 - 26	4	0	0	0	0	0	0	0
26 - 28	0	0	0	0	0	0	0	0
28 - 30	0	0	0	0	0	0	0	0
30 - 32	0	0	0	0	0	0	0	0
32 - 34	0	0	0	0	0	0	0	0
34 - 36	0	0	0	0	0	0	0	0
36 - 38	0	0	0	0	0	0	0	0
38 - 40	0	0	0	0	0	0	0	0
40 - 42	0	0	0	0	0	0	0	0
42 - 44	0	0	0	0	0	0	0	0
44 - 46	0	0	0	0	0	0	0	0
46 - 48	0	0	0	0	0	0	0	0
48 - 50	2	0	0	0	0	0	0	0
50 - 52	0	0	0	0	0	0	0	0
52 - 54	0	0	0	0	0	0	0	0
54 - 56	0	0	0	0	0	0	0	0
56 - 58	0	0	0	0	0	0	0	0
58 - 60	0	0	0	0	0	0	0	0
60 - 62	0	0	0	0	0	0	0	0
62 +	0	0	0	0	0	0	0	0

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 2	0	0	0	0	0	0	0	0
2 - 4	0	0	0	0	0	0	0	0
4 - 6	0	0	0	0	0	0	0	0
6 - 8	0	0	0	0	0	0	0	0
8 - 10	0	0	0	0	0	0	0	0
10 - 12	0	0	0	0	0	0	0	0
12 - 14	0	0	0	1	0	0	0	0
14 - 16	0	0	0	0	0	0	0	0
16 - 18	0	0	0	0	0	0	0	0
18 - 20	0	0	0	0	0	0	0	0
20 - 22	0	0	0	0	0	0	0	0
22 - 24	0	0	0	0	0	0	0	0
24 - 26	0	0	0	0	0	0	0	0
26 - 28	0	0	0	0	0	0	0	0
28 - 30	0	0	0	0	0	0	0	0
30 - 32	0	0	0	0	0	0	0	0
32 - 34	0	0	0	0	0	0	0	0
34 - 36	0	0	0	0	0	0	0	0
36 - 38	0	0	0	0	0	0	0	0
38 - 40	0	0	0	0	0	0	0	0
40 - 42	0	0	0	0	0	0	0	0
42 - 44	0	0	0	0	0	0	0	0
44 - 46	0	0	0	0	0	0	0	0
46 - 48	0	0	0	0	0	0	0	0
48 - 50	0	0	0	0	0	0	0	0
50 - 52	0	0	0	0	0	0	0	0
52 - 54	0	0	0	0	0	0	0	0
54 - 56	0	0	0	0	0	0	0	0
56 - 58	0	0	0	0	0	0	0	0
58 - 60	0	0	0	0	0	0	0	0
60 - 62	0	0	0	0	0	0	0	0
62 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Tridem Axle Weight Table

Number of Tridem Axles

Start Time: Wed May 17 00:00:17 1989

Collection Interval: Daily

Lane: 2 Page 1

Wt. Cat. (000's)	Classification 1	2	3	4	5	6	7	8
0 - 2	35	0	0	0	0	0	0	2
2 - 4	13	0	0	0	0	0	0	0
4 - 6	0	0	0	0	0	0	0	0
6 - 8	0	0	0	0	0	0	0	0
8 - 10	1	0	0	0	0	0	0	0
10 - 12	0	0	0	0	0	0	0	0
12 - 14	1	0	0	0	0	0	0	0
14 - 16	1	1	0	0	0	0	0	0
16 - 18	0	0	0	0	0	0	0	0
18 - 20	0	0	0	0	0	0	0	0
20 - 22	0	0	0	0	0	0	0	0
22 - 24	0	0	0	0	0	0	0	0
24 - 26	0	0	0	0	0	0	0	0
26 - 28	0	0	0	0	0	0	0	0
28 - 30	0	0	0	0	0	0	0	0
30 - 32	0	0	0	0	0	0	0	0
32 - 34	0	0	0	0	0	0	0	0
34 - 36	0	0	0	0	0	0	0	0
36 - 38	0	0	0	0	0	0	0	0
38 - 40	0	0	0	0	0	0	0	0
40 - 42	0	0	0	0	0	0	0	0
42 - 44	0	0	0	0	0	0	0	0
44 - 46	0	0	0	0	0	0	0	0
46 - 48	0	0	0	0	0	0	0	0
48 - 50	0	0	0	0	0	0	0	0
50 - 52	0	0	0	0	0	0	0	0
52 - 54	0	0	0	0	0	0	0	0
54 - 56	0	0	0	0	0	0	0	0
56 - 58	0	0	0	0	0	0	0	0
58 - 60	0	0	0	0	0	0	0	0
60 - 62	0	0	0	0	0	0	0	0
62 +	0	0	0	0	0	0	0	0

Lane: 2 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 2	1	0	0	0	0	0	0	0
2 - 4	0	0	0	0	0	0	0	0
4 - 6	0	0	0	0	0	0	0	0
6 - 8	0	0	0	0	0	0	0	0
8 - 10	0	0	0	0	0	0	0	0
10 - 12	0	0	0	0	0	0	0	0
12 - 14	0	0	0	0	0	0	0	0
14 - 16	0	0	0	0	0	0	0	0
16 - 18	0	0	0	0	0	0	0	0
18 - 20	0	0	0	0	0	0	0	0
20 - 22	0	0	0	0	0	0	0	0
22 - 24	0	0	0	0	0	0	0	0
24 - 26	0	0	0	0	0	0	0	0
26 - 28	0	0	0	0	0	0	0	0
28 - 30	0	0	0	0	0	0	0	0
30 - 32	0	0	0	0	0	0	0	0
32 - 34	0	0	0	0	0	0	0	0
34 - 36	0	0	0	0	0	0	0	0
36 - 38	0	0	0	0	0	0	0	0
38 - 40	0	0	0	0	0	0	0	0
40 - 42	0	0	0	0	0	0	0	0
42 - 44	0	0	0	0	0	0	0	0
44 - 46	0	0	0	0	0	0	0	0
46 - 48	0	0	0	0	0	0	0	0
48 - 50	0	0	0	0	0	0	0	0
50 - 52	0	0	0	0	0	0	0	0
52 - 54	0	0	0	0	0	0	0	0
54 - 56	0	0	0	0	0	0	0	0
56 - 58	0	0	0	0	0	0	0	0
58 - 60	0	0	0	0	0	0	0	0
60 - 62	0	0	0	0	0	0	0	0
62 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Tridem Axle Weight Table

Number of Tridem Axles

Start Time: Wed May 17 00:00:17 1989

Collection Interval: Daily

Lane: 3 Page 1

Wt. (000's)	Cat.	Classification 1	2	3	4	5	6	7	8
0	- 2	104	0	7	0	0	1	2	0
2	- 4	68	0	3	0	0	0	1	0
4	- 6	3	0	0	0	0	1	0	0
6	- 8	0	0	0	0	0	0	0	0
8	- 10	0	0	2	0	0	0	0	0
10	- 12	0	0	0	0	0	0	0	0
12	- 14	0	0	0	0	0	0	0	0
14	- 16	5	0	0	0	0	0	0	0
16	- 18	0	0	0	0	0	0	0	0
18	- 20	0	0	0	0	0	0	0	0
20	- 22	0	0	0	0	0	0	0	0
22	- 24	0	0	0	0	0	0	0	0
24	- 26	0	0	0	0	0	0	0	0
26	- 28	0	0	0	0	0	0	0	0
28	- 30	0	0	0	0	0	0	0	0
30	- 32	0	0	0	0	0	0	0	0
32	- 34	0	0	0	0	0	0	0	0
34	- 36	0	0	0	0	0	0	0	0
36	- 38	0	0	0	0	0	0	0	0
38	- 40	0	0	0	0	0	0	0	0
40	- 42	0	0	0	0	0	0	0	0
42	- 44	0	0	0	0	0	0	0	0
44	- 46	0	0	0	0	0	0	0	0
46	- 48	0	0	0	0	0	0	0	0
48	- 50	0	0	0	0	0	0	0	0
50	- 52	0	0	0	0	0	0	0	0
52	- 54	0	0	0	0	0	0	0	0
54	- 56	0	0	0	0	0	0	0	0
56	- 58	0	0	0	0	0	0	0	0
58	- 60	0	0	0	0	0	0	0	0
60	- 62	0	0	0	0	0	0	0	0
62	+	0	0	0	0	0	0	0	0

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 2	0	0	0	0	0	0	0	0
2 - 4	0	0	0	0	0	0	0	0
4 - 6	2	0	0	0	0	0	0	0
6 - 8	0	0	0	0	0	0	0	0
8 - 10	0	1	0	0	0	0	0	0
10 - 12	0	0	0	0	0	0	0	0
12 - 14	1	0	0	0	0	0	0	0
14 - 16	0	0	0	0	0	0	0	0
16 - 18	0	0	0	0	0	0	0	0
18 - 20	0	0	0	0	0	0	0	0
20 - 22	0	0	0	0	0	0	0	0
22 - 24	0	0	0	0	0	0	0	0
24 - 26	0	0	0	0	0	1	0	0
26 - 28	0	0	0	0	0	0	0	0
28 - 30	0	0	0	0	0	0	0	0
30 - 32	0	0	0	0	0	0	0	0
32 - 34	0	0	0	0	0	0	0	0
34 - 36	0	0	0	0	0	0	0	0
36 - 38	0	0	0	0	0	0	0	0
38 - 40	0	0	0	0	0	0	0	0
40 - 42	0	0	0	0	0	0	0	0
42 - 44	0	0	0	0	0	0	0	0
44 - 46	0	0	0	0	0	0	0	0
46 - 48	0	0	0	0	0	0	0	0
48 - 50	1	0	0	0	0	0	0	0
50 - 52	0	0	0	0	0	0	0	0
52 - 54	0	0	0	0	0	0	0	0
54 - 56	0	0	0	0	0	0	0	0
56 - 58	0	0	0	0	0	0	0	0
58 - 60	0	0	0	0	0	0	0	0
60 - 62	0	0	0	0	0	0	0	0
62 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Single Axle Weight Table

Number of Single Axles

Start Time: Wed May 17 00:00:17 1989

Collection Interval: Daily

Lane: 1 Page 1

Wt. Cat. (000's)	Classification 1	2	3	4	5	6	7	8
0 - 1	892	29	0	2	0	0	0	0
1 - 2	15	50	0	1	0	0	0	0
2 - 3	6	22	0	0	0	0	0	0
3 - 4	15	9	0	0	1	0	0	0
4 - 5	1	4	0	0	0	0	0	0
5 - 6	13	3	0	0	0	0	0	0
6 - 7	1	1	0	1	0	0	0	0
7 - 8	3	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 - 10	4	0	0	0	0	0	0	0
10 - 11	0	0	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 - 16	0	0	0	0	0	0	0	0
16 - 17	0	0	0	0	0	0	0	0
17 - 18	0	1	0	0	0	0	0	0
18 - 19	0	0	0	0	0	0	0	0
19 - 20	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	0	0	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	0	0	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 - 16	0	0	0	0	0	0	0	0
16 - 17	0	0	0	0	0	0	0	0
17 - 18	0	0	0	0	0	0	0	0
18 - 19	0	0	0	0	0	0	0	0
19 - 20	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Single Axle Weight Table

Number of Single Axles

Start Time: Wed May 17 00:00:17 1989

Collection Interval: Daily
Lane: 2 Page 1

Wt. (000's)	Cat.	1	2	3	4	5	6	7	8
0 - 1	1511	29	0	0	0	0	0	0	
1 - 2	30	8	0	0	0	0	0	0	
2 - 3	12	1	0	1	0	0	0	0	
3 - 4	22	2	0	0	0	0	0	0	
4 - 5	18	2	0	0	0	0	0	0	
5 - 6	0	1	0	0	0	0	0	0	
6 - 7	0	0	0	0	0	0	0	0	
7 - 8	0	0	0	0	0	0	0	0	
8 - 9	0	0	0	0	0	0	0	0	
9 - 10	0	0	0	1	0	0	0	0	
10 - 11	0	0	0	0	0	0	0	0	
11 - 12	0	0	0	0	0	0	0	0	
12 - 13	0	0	0	0	0	0	0	0	
13 - 14	0	0	0	0	0	0	0	0	
14 - 15	0	0	0	0	0	0	0	0	
15 - 16	0	0	0	0	0	0	0	0	
16 - 17	0	0	0	0	0	0	0	0	
17 - 18	0	0	0	0	0	0	0	0	
18 - 19	0	0	0	0	0	0	0	0	
19 - 20	0	0	0	0	0	0	0	0	
20 - 21	0	0	0	0	0	0	0	0	
21 - 22	0	0	0	0	0	0	0	0	
22 - 23	0	0	0	0	0	0	0	0	
23 - 24	0	0	0	0	0	0	0	0	
24 - 25	0	0	0	0	0	0	0	0	
25 - 26	0	0	0	0	0	0	0	0	
26 - 27	0	0	0	0	0	0	0	0	
27 - 28	0	0	0	0	0	0	0	0	
28 - 29	0	0	0	0	0	0	0	0	
29 - 30	0	0	0	0	0	0	0	0	
30 - 31	0	0	0	0	0	0	0	0	
31 +	0	0	0	0	0	0	0	0	

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	0	1	0	0	0	0	0	0
1 - 2	0	0	0	0	0	0	0	0
2 - 3	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0
5 - 6	0	0	0	0	0	0	0	0
6 - 7	0	0	0	0	0	0	0	0
7 - 8	0	0	0	0	0	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 - 10	0	0	0	0	0	0	0	0
10 - 11	0	0	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 - 16	0	0	0	0	0	0	0	0
16 - 17	0	0	0	0	0	0	0	0
17 - 18	0	0	0	0	0	0	0	0
18 - 19	0	0	0	0	0	0	0	0
19 - 20	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Single Axle Weight Table

Number of Single Axles

Start Time: Wed May 17 00:00:17 1989

Collection Interval: Daily
Lane: 3 Page 1

Wt. (000's)	Cat.	Classification 1	2	3	4	5	6	7	8
0 -	1	3113	96	32	12	0	13	3	0
1 -	2	124	99	2	8	1	1	0	2
2 -	3	39	51	1	5	1	2	1	1
3 -	4	92	45	5	5	2	2	2	1
4 -	5	42	41	1	3	5	1	0	0
5 -	6	1	14	0	1	8	0	0	0
6 -	7	0	9	0	2	5	0	0	0
7 -	8	0	5	0	0	0	0	0	0
8 -	9	0	3	0	0	1	0	0	0
9 -	10	0	3	0	0	0	0	0	0
10 -	11	0	0	0	0	0	0	0	0
11 -	12	0	1	0	0	0	0	0	0
12 -	13	0	0	0	0	0	0	0	0
13 -	14	0	0	0	0	0	0	0	0
14 -	15	0	0	0	0	0	0	0	0
15 -	16	0	0	0	0	0	0	0	0
16 -	17	0	2	0	0	0	0	0	0
17 -	18	0	0	0	0	0	0	0	0
18 -	19	0	0	0	0	0	0	0	0
19 -	20	0	0	0	0	0	0	0	0
20 -	21	0	0	0	0	0	0	0	0
21 -	22	0	0	0	0	0	0	0	0
22 -	23	0	0	0	0	0	0	0	0
23 -	24	0	0	0	0	0	0	0	0
24 -	25	0	0	0	0	0	0	0	0
25 -	26	0	0	0	0	0	0	0	0
26 -	27	0	0	0	0	0	0	0	0
27 -	28	0	0	0	0	0	0	0	0
28 -	29	0	0	0	0	0	0	0	0
29 -	30	0	0	0	0	0	0	0	0
30 -	31	0	0	0	0	0	0	0	0
31 +		0	0	0	0	0	0	0	0

Lane: 3 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 1	0	3	0	0	0	0	0	0
1 - 2	0	1	0	0	0	0	0	0
2 - 3	0	1	0	0	0	0	0	0
3 - 4	0	1	0	0	0	0	0	0
4 - 5	0	0	0	0	0	0	0	0
5 - 6	0	1	0	0	0	2	0	0
6 - 7	0	0	0	0	0	0	0	0
7 - 8	0	1	0	0	1	0	0	0
8 - 9	0	0	0	0	0	0	0	0
9 - 10	0	0	0	0	0	1	0	0
10 - 11	0	0	0	0	0	0	0	0
11 - 12	0	0	0	0	0	0	0	0
12 - 13	0	0	0	0	0	0	0	0
13 - 14	0	0	0	0	0	0	0	0
14 - 15	0	0	0	0	0	0	0	0
15 - 16	0	0	0	0	0	0	0	0
16 - 17	0	0	0	0	0	0	0	0
17 - 18	0	0	0	0	0	0	0	0
18 - 19	0	0	0	0	0	0	0	0
19 - 20	0	0	0	0	0	0	0	0
20 - 21	0	0	0	0	0	0	0	0
21 - 22	0	0	0	0	0	0	0	0
22 - 23	0	0	0	0	0	0	0	0
23 - 24	0	0	0	0	0	0	0	0
24 - 25	0	0	0	0	0	0	0	0
25 - 26	0	0	0	0	0	0	0	0
26 - 27	0	0	0	0	0	0	0	0
27 - 28	0	0	0	0	0	0	0	0
28 - 29	0	0	0	0	0	0	0	0
29 - 30	0	0	0	0	0	0	0	0
30 - 31	0	0	0	0	0	0	0	0
31 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Gross Vehicle Weight Table

Number of Vehicles

Start Time: Wed May 17 00:00:17 1989

Collection Interval: Daily
Lane: 1

Wt. Cat. (000's)	Classification 1	2	3	4	5	6	7	8
0 - 3	1849	48	2	0	0	0	0	0
3 - 6	2	47	0	1	0	0	0	0
6 - 9	0	13	0	0	0	0	0	0
9 - 12	0	2	2	0	1	0	0	0
12 - 15	0	0	4	1	0	0	1	0
15 - 18	0	0	7	0	0	1	0	0
18 - 21	0	0	3	0	0	0	0	0
21 - 24	0	1	0	0	0	0	3	0
24 - 27	0	0	1	0	0	0	0	0
27 - 30	0	0	0	0	0	0	0	0
30 - 33	0	0	0	0	0	0	0	0
33 - 36	0	0	0	0	0	0	0	0
36 - 39	0	0	0	0	0	0	0	0
39 - 42	0	0	0	0	0	0	0	0
42 - 45	0	0	0	0	0	0	0	0
45 - 48	0	0	0	0	0	0	0	0
48 - 51	0	0	0	0	0	0	0	0
51 - 54	0	0	0	0	0	0	0	0
54 - 57	0	0	0	0	0	0	0	0
57 - 60	25	1	0	0	0	0	0	0
60 - 63	0	0	0	0	0	0	0	0
63 - 66	0	0	0	0	0	0	0	0
66 - 69	0	0	0	0	0	0	0	0
69 - 72	0	0	0	0	0	0	0	0
72 - 75	0	0	0	0	0	0	0	0
75 - 78	0	0	0	0	0	0	0	0
78 - 81	0	0	0	0	0	0	0	0
81 - 84	0	0	0	0	0	0	0	0
84 - 87	0	0	0	0	0	0	0	0
87 - 90	0	0	0	0	0	0	0	0
90 - 93	0	0	0	0	0	0	0	0
93 +	0	0	0	0	0	0	0	0

Lane: 1 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 3	0	0	0	0	0	0	2	0
3 - 6	0	0	0	0	0	0	2	0
6 - 9	0	0	0	0	0	0	1	0
9 - 12	0	0	0	0	0	0	0	0
12 - 15	0	0	0	0	0	0	0	0
15 - 18	0	0	0	0	0	0	0	0
18 - 21	0	0	0	0	0	0	0	0
21 - 24	0	0	0	0	0	0	0	0
24 - 27	0	1	0	0	0	0	0	0
27 - 30	0	0	0	0	0	0	0	0
30 - 33	0	0	0	0	0	0	0	0
33 - 36	0	0	0	0	0	0	0	0
36 - 39	0	0	0	0	0	0	0	0
39 - 42	0	0	0	1	0	0	0	0
42 - 45	1	0	0	0	0	0	0	0
45 - 48	0	0	0	0	0	0	0	0
48 - 51	0	0	0	0	0	0	0	0
51 - 54	0	0	0	0	0	0	0	0
54 - 57	0	0	0	0	0	0	0	0
57 - 60	0	0	0	0	0	0	0	0
60 - 63	0	0	0	0	0	0	0	0
63 - 66	0	0	0	0	0	0	0	0
66 - 69	0	0	0	0	0	0	0	0
69 - 72	0	0	0	0	0	0	0	0
72 - 75	0	0	0	0	0	0	0	0
75 - 78	0	0	0	0	0	0	0	0
78 - 81	0	0	0	0	0	0	0	0
81 - 84	0	0	0	0	0	0	0	0
84 - 87	0	0	0	0	0	0	0	0
87 - 90	0	0	0	0	0	0	0	0
90 - 93	0	0	0	0	0	0	0	0
93 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Gross Vehicle Weight Table

Number of Vehicles

Start Time: Wed May 17 00:00:17 1989

Collection Interval: Daily

Lane: 2 Page 1

Wt. Cat. (000's)	Classification 1	2	3	4	5	6	7	8
0 - 3	2645	5	31	1	0	0	13	5
3 - 6	0	8	0	0	0	0	0	2
6 - 9	0	2	0	0	0	0	0	0
9 - 12	0	0	0	0	0	0	0	0
12 - 15	0	0	1	1	0	0	0	0
15 - 18	4	0	0	0	0	0	0	0
18 - 21	0	0	0	0	0	0	0	0
21 - 24	0	0	1	0	0	0	0	0
24 - 27	0	0	0	0	0	0	0	0
27 - 30	0	0	0	0	0	0	0	0
30 - 33	0	0	0	0	0	0	0	0
33 - 36	0	0	0	0	0	0	0	0
36 - 39	0	0	0	0	0	0	0	0
39 - 42	0	0	0	0	0	0	0	0
42 - 45	0	0	0	0	0	0	0	0
45 - 48	0	0	0	0	0	0	0	0
48 - 51	0	0	0	0	0	0	0	0
51 - 54	0	0	0	0	0	0	0	0
54 - 57	0	0	0	0	0	0	0	0
57 - 60	41	2	0	0	0	0	0	0
60 - 63	0	0	0	0	0	0	0	0
63 - 66	0	0	0	0	0	0	0	0
66 - 69	0	0	0	0	0	0	0	0
69 - 72	0	0	0	0	0	0	0	0
72 - 75	0	0	0	0	0	0	0	0
75 - 78	0	0	0	0	0	0	0	0
78 - 81	0	0	0	0	0	0	0	0
81 - 84	0	0	0	0	0	0	0	0
84 - 87	0	0	0	0	0	0	0	0
87 - 90	0	0	0	0	0	0	0	0
90 - 93	0	0	0	0	0	0	0	0
93 +	0	0	0	0	0	0	0	0

Lane: 2 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 3	2	1	0	4	0	0	4	0
3 - 6	0	0	0	0	0	0	1	0
6 - 9	0	0	0	0	0	0	1	0
9 - 12	0	0	0	0	0	0	0	0
12 - 15	0	0	0	0	0	0	0	0
15 - 18	0	0	0	0	0	0	0	0
18 - 21	0	0	0	0	0	0	0	0
21 - 24	0	0	0	0	0	0	0	0
24 - 27	0	0	0	0	0	0	0	0
27 - 30	0	0	0	0	0	0	0	0
30 - 33	0	0	0	0	0	0	0	0
33 - 36	0	0	0	0	0	0	0	0
36 - 39	0	1	0	0	0	0	0	0
39 - 42	0	0	0	0	0	0	0	0
42 - 45	0	0	0	0	0	0	0	0
45 - 48	0	0	0	0	0	0	0	0
48 - 51	0	0	0	0	0	0	0	0
51 - 54	0	0	0	0	0	0	0	0
54 - 57	0	0	0	0	0	0	0	0
57 - 60	0	0	0	0	0	0	0	0
60 - 63	0	0	0	0	0	0	0	0
63 - 66	0	0	0	0	0	0	0	0
66 - 69	0	0	0	0	0	0	0	0
69 - 72	0	0	0	0	0	0	0	0
72 - 75	0	0	0	0	0	0	0	0
75 - 78	0	0	0	0	0	0	0	0
78 - 81	0	0	0	0	0	0	0	0
81 - 84	0	0	0	0	0	0	0	0
84 - 87	0	0	0	0	0	0	0	0
87 - 90	0	0	0	0	0	0	0	0
90 - 93	0	0	0	0	0	0	0	0
93 +	0	0	0	0	0	0	0	0

International Road Dynamics
Low Cost
Weigh In Motion System

Gross Vehicle Weight Table

Number of Vehicles

Start Time: Wed May 17 00:00:17 1989

Collection Interval: Daily

Lane: 3 Page 1

Wt. Cat. (000's)	Classification 1	2	3	4	5	6	7	8
0 - 3	1695	58	7	1	0	0	0	0
3 - 6	16	159	3	7	1	0	0	0
6 - 9	1	70	12	4	1	2	3	0
9 - 12	0	20	24	3	3	0	5	0
12 - 15	0	4	14	3	8	0	12	0
15 - 18	6	1	19	0	6	3	15	1
18 - 21	0	0	17	0	2	2	6	1
21 - 24	0	0	14	0	2	0	7	0
24 - 27	0	0	9	0	0	5	13	0
27 - 30	0	0	2	0	0	0	12	0
30 - 33	0	0	1	0	0	3	5	0
33 - 36	0	0	0	0	0	1	1	0
36 - 39	0	0	3	0	0	0	3	0
39 - 42	0	0	0	0	0	0	1	0
42 - 45	0	0	0	0	0	0	1	0
45 - 48	0	0	0	0	0	0	2	0
48 - 51	0	0	0	0	0	0	1	0
51 - 54	0	0	0	0	0	0	0	0
54 - 57	0	0	0	0	0	0	0	0
57 - 60	148	4	4	0	0	1	1	0
60 - 63	0	0	0	0	0	0	0	0
63 - 66	0	0	0	0	0	0	0	0
66 - 69	0	0	0	0	0	0	0	0
69 - 72	0	0	0	0	0	0	0	0
72 - 75	0	0	0	0	0	0	0	0
75 - 78	0	0	0	0	0	0	0	0
78 - 81	0	0	0	0	0	0	0	0
81 - 84	0	0	0	0	0	0	0	0
84 - 87	0	0	0	0	0	0	0	0
87 - 90	0	0	0	0	0	0	0	0
90 - 93	0	0	0	0	0	0	0	0
93 +	0	2	0	0	0	0	0	0

Lane: 3 Page 2

Wt. Cat. (000's)	Classification 9	10	11	12	13	14	15	16
0 - 3	0	0	0	0	0	0	5	0
3 - 6	0	0	0	0	0	0	5	0
6 - 9	0	0	0	0	0	0	1	0
9 - 12	0	1	0	1	0	0	0	0
12 - 15	0	0	0	0	0	0	0	0
15 - 18	1	1	0	0	0	0	0	0
18 - 21	1	0	0	0	0	0	0	0
21 - 24	0	1	0	0	0	0	0	0
24 - 27	1	2	0	0	0	0	0	0
27 - 30	0	0	0	1	0	0	0	0
30 - 33	1	0	0	0	0	0	0	0
33 - 36	0	0	0	0	0	0	0	0
36 - 39	0	2	0	0	0	0	0	0
39 - 42	0	1	0	2	0	0	0	0
42 - 45	0	1	0	0	0	0	0	0
45 - 48	0	1	0	1	0	0	0	0
48 - 51	0	0	0	1	0	0	0	0
51 - 54	0	0	0	0	0	0	0	0
54 - 57	1	0	0	0	0	0	0	0
57 - 60	0	1	0	0	0	0	0	0
60 - 63	0	0	0	0	0	0	0	0
63 - 66	0	0	0	0	0	0	0	0
66 - 69	0	0	0	0	0	0	0	0
69 - 72	0	0	0	0	0	1	0	0
72 - 75	0	0	0	0	0	0	0	0
75 - 78	0	0	0	0	0	0	0	0
78 - 81	0	0	0	0	0	0	0	0
81 - 84	0	0	0	0	1	0	0	0
84 - 87	0	0	0	0	0	0	0	0
87 - 90	0	0	0	0	0	0	0	0
90 - 93	0	0	0	0	0	0	0	0
93 +	1	0	0	0	0	0	0	0